REMEDIAL ACTION COMPLETION REPORT

for

A PORTION OF WILLOW STREET STATION
CHICAGO, ILLINOIS

Prepared for

THE PEOPLES GAS
LIGHT and COKE COMPANY

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PROJECT NO. 28020

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EXECUTIVE SUMMARY

The *Remedial Action Completion Report* (RACR) presents and describes remedial action activities conducted in two phases (Phase I and Phase II) from January through April 2003 and in July 2003, respectively, at a portion of Willow Street Station (Site).

Soil removal activities were implemented as described in the *Remediation Objectives Report and Remedial Action Plan* (ROR/RAP) (Burns & McDonnell 2003a). Remedial action activities discussed in the ROR/RAP included the removal of all source material and surface soil to meet Tiered Approach to Corrective Action Objectives (TACO) industrial/commercial Tier 1 soil ingestion, soil inhalation and Class II soil to groundwater migration remediation objectives [35 Illinois Administrative Code (IAC) 742].

The following remediation objectives and remedial actions were established:

- Remove source material with a total petroleum hydrocarbon (TPH) concentration greater than 2,000 milligrams per kilogram (mg/kg) along with visually impacted pipe located on the southeastern portion of the Site.
- Remove all surface soil (0 to 3 feet bgs) at the Site to meet industrial/commercial Tier 1 soil ingestion, soil inhalation and Class II soil to groundwater migration remediation objectives.
- Collect subsurface samples and analyze for synthetic precipitation leaching procedure (SPLP) iron and SPLP manganese to further evaluate the soil to groundwater migration pathway and determine if soil meets Tier 1 soil to groundwater migration remediation objectives.

Remedial action activities included site preparation; waste characterization; excavation, stockpiling, offsite disposal of impacted soils and backfilling; confirmation sampling; management of water from excavations; and demobilization and site restoration.

In accordance with the ROR/RAP, remedial action activities were performed in two phases (Phase I and Phase II). Phase I consisted of excavation activities on the southeastern half of the Site (approximately 140 feet by 30 feet) to remove source material and all surface soil up to the former location of the high pressure gas main. Phase I remedial activities to remove source material were performed sequentially in six cells using a temporary shoring system. Each cell was excavated to 12 feet below ground surface (bgs) and backfilled to 2 feet bgs with flowable grout (impermeable once cured). During source removal, impacts were observed along the southeastern and eastern property lines. Following source removal activities, 3 feet of soil was removed up to the former location of the high pressure gas main. In addition, one small area (approximately 15 feet by 15 feet) north of the source removal area was excavated to 5 feet bgs based on visual observations and confirmation sampling results. Phase II consisted of the excavation activities on the northwestern half of the Site (approximately 125 feet by 30 feet) to remove all remaining surface soil following relocation of the high pressure gas main. Impacts were not observed at the property line during Phase II remedial activities.

Confirmation sampling was performed during Phase I and Phase II in order to verify that remaining soil was in compliance with established remediation objectives. All excavated soil and water were disposed of at Illinois-approved disposal facilities. Imported, non-impacted course aggregate (CA6) was placed and compacted on top of the cured grout from 0 to 2 feet bgs, in the 5-foot excavation area, and in all 3-foot excavation areas.

All remaining soil complies with established remediation objectives; therefore, the remedial action is intended to be a final action. Three feet of imported soil exists across the Site for industrial/commercial usage of the property. There are no construction worker concerns from 0 to 10 feet bgs. The following special conditions apply to the Site:

- Future use of the property will be industrial/commercial; and
- Soil excavated greater than 3 feet bgs should not be placed within the upper 3 feet of the Site. The excavated soil should be handled according to applicable regulations.

* * * * *

1.0 INTRODUCTION

The *Remedial Action Completion Report* (*RACR*) describes remedial action activities performed by Burns & McDonnell at a portion of Willow Street Station (Site). Phase I and Phase II remedial action activities were conducted from January through April 2003 and in July 2003, respectively.

Removal activities were implemented as described in the *Remediation Objectives Report and Remedial Action Plan (ROR/RAP)* (Burns & McDonnell 2003a). Remedial action activities discussed in the *ROR/RAP* included removal of all source material along with visually impacted pipe located in the southeastern portion of the Site and all surface soil [0 to 3 feet below ground surface (bgs)].

This completion report is organized into six sections as follows:

- **Section 1.0–Introduction**
  This section describes the purpose and organization of the report and summarizes the general Site information, including location, environmental conditions, and post-remediation use of the Site.
- **Section 2.0–Field Activities**
  This section describes field activities conducted during the remedial action.
- **Section 3.0–Results**
  This section demonstrates that remedial action activities achieved the remediation objectives.
- **Section 4.0–Special Conditions**
  This section discusses special conditions that apply to the Site following remedial action activities.
- **Section 5.0–Conclusions**
  This section discusses the success of the remedial action in meeting the remediation objectives and assesses the completeness and accuracy of the supporting data.
- **Section 6.0–References**

1.1 GENERAL SITE INFORMATION

The Site is a 30-foot by 265-foot parcel and is a portion of the former Willow Street and Hawthorne Street Stations that were located between Hawthorne and Marcey Streets from Willow to Wisconsin Streets. The northern portion of the former Hawthorne Station is owned by ComEd and is currently used as a transformer station and equipment storage yard. The southern portion of the former Hawthorne Station is owned by Marcy Properties, LLC and The Peoples Gas Light and Coke Company (Peoples Gas). The western portion of the Willow Street Station is owned by GI North Property LLC. The eastern portion of the Willow Station includes the Site owned by Peoples Gas and is described in the report entitled *Preliminary Site Investigation - Willow Street Station Gas Production and Storage Facility - Chicago, Illinois*, dated November 1991. The Site, approximately 0.18 acre in size, is located at the northeast corner of Willow Street and Kingsbury Street, and is approximately 380 to 455 feet east of the North Branch of the Chicago River. Figure 1 presents the Site location map.

The Site is located in Section 32, Township 40 North, Range 14 East in the City of Chicago, Illinois in the North Township of Cook County (City of Chicago 2002). The Site is currently vacant and was mostly covered by asphalt prior to remedial activities and is located in an industrial/commercial area with no residential properties in the immediate vicinity. A copy of the Plat of Survey is presented in Appendix A.

Hanson Engineers Incorporated (HEI) conducted preliminary site investigations in 1991 for both the Willow and Hawthorne Street Stations. These investigations included a review of the environmental setting, historical documents provided by Peoples Gas, Sanborn maps and a water well survey. A gas holder with a capacity of 2,500,000 cubic feet (ft^3) was located adjacent to the Site with only a small portion extending onto the eastern property. The reports concluded that below ground structures of the gas holder may be present on the Site and, if present, may contain residual tars, unless the tar was removed during demolition of the gas holder (HEI 1991).

In November 2000, Barr Engineering Company (Barr) conducted a limited site investigation (SI) on the southeastern portion of the Site, an area approximately 30-feet by 110-feet in size. Eight (8) soil borings were advanced in the southeastern corner of the property and fourteen soil samples were collected. Two (2) piezometers were installed and groundwater samples were collected.

In June 2002, Burns & McDonnell conducted a supplemental site investigation (SSI) at the Site. The objective of the SSI was to identify the environmental condition of abandoned pipes; determine whether residuals, if any, from past manufactured gas plant (MGP) activities were present in surface soil and subsurface soil; and define the nature and extent of impacted areas to aid in the development of remediation objectives. The SSI consisted of using an air knife device to locate an active gas line located on the western portion of the Site, excavation of three test trenches on the southeastern portion of the Site and advancement of fifteen (15) soil probes on Site. Eight (8) surface soil samples and thirteen (13) subsurface soil samples were collected. In addition, one waste characterization sample was collected where visually impacted soil was observed.

1.2 RECOGNIZED ENVIRONMENTAL CONDITIONS

Investigation activities performed at the Site concluded that surface and subsurface soil exceeded industrial/commercial Tier 1 screening levels. In addition, source material was identified at the Site.

The corrective measures presented below were intended to eliminate exposure to surface and subsurface soil exceeding established remediation objectives and to allow for industrial/commercial property use. The following remediation objectives and remedial actions were established:

- Remove source material with a total petroleum hydrocarbon (TPH) concentration greater than 2,000 milligrams per kilogram (mg/kg) along with visually impacted pipe on the southeastern portion of the Site.
- Remove all surface soil (0 to 3 feet bgs) at the Site to meet industrial/commercial Tier 1 soil ingestion, soil inhalation and Class II soil to groundwater migration remediation objectives.

- Collect subsurface samples and analyze for synthetic precipitation leaching procedure (SPLP) iron and SPLP manganese to further evaluate the soil to groundwater migration pathway and determine if soil meets Tier 1 soil to groundwater migration remediation objectives.

1.3 POST-REMEDIATION USE

The Site is located in a district zoned as Planned Manufacturing District (PMD) No. 1 with no residential properties in the immediate vicinity (City of Chicago, Zoning Department website 2002). The Site is being sold and is expected to continue as an industrial/commercial property.

* * * * *

2.0 FIELD ACTIVITIES

This section describes field activities performed during Phase I and Phase II remedial action activities at the Site in accordance with the *ROR/RAP* (Burns & McDonnell 2003a). Phase I remedial actions included:

- Site preparation;
- Installation of temporary shoring system;
- Excavation, stockpiling, offsite disposal of impacted soils and pipes, and backfilling;
- Confirmation soil sampling;
- Management of water from excavations; and
- Demobilization and site restoration.

Phase II included the same remedial actions with the exception of the installation of the temporary shoring system.

Phase I and Phase II remedial action photographs are presented in Appendix B.

2.1 SITE PREPARATION

The following site preparation tasks were performed between January 8 and January 17, 2003, prior to the initiation of Phase I remedial action field activities:

- Delivery of onsite office trailer;
- Installation of temporary 6-foot chain-link fence to enclose the entire remedial action activity area;
- Installation of electrical and phone service to the onsite office trailer;
- Installation of temporary drop down electrical service;
- Placement of securely fastened silt fabric over the chain-link fence surrounding the remedial action activity area to limit odors and air emissions, if any, migrating offsite during remedial activities; and
- Location of buried utilities.

The following site preparation tasks were performed in June and July 2003, prior to the initiation of Phase II remedial action field activities:

- Relocation of onsite office trailer; and
- Relocation of the high pressure gas main to a location immediately outside the Site.

2.2 WASTE CHARACTERIZATION

Waste characterization samples were collected and analyzed and all necessary soil and water disposal permits were prepared and obtained prior to remedial action activities. Analytical results and copies of disposal permits are presented in the *Remedial Action Disposal Quantities* (Burns & McDonnell 2003b).

2.3 EXCAVATION, STOCKPILING, OFFSITE DISPOSAL OF IMPACTED SOILS AND PIPES, AND BACKFILLING

The remedial activities at the Site occurred in two phases (Phase I and Phase II) in accordance with the *ROR/RAP* (Burns & McDonnell 2003a). Phase I activities occurred in the southeastern portion of the Site and consisted of excavation of all source material covering an area approximately 50-feet by 30-feet in size. In addition, Phase I activities included the excavation of surface soil (0 to 3 feet bgs) from an area approximately 90-feet by 30-feet in size up to the former location of the high pressure gas main. Phase II activities consisted of the excavation of surface soil (0 to 3 feet bgs) from an area approximately 125-feet by 30-feet in size on the northwestern portion of the Site once the high pressure gas main had been relocated outside the property. Figure 2 presents the initial excavation layout.

During Phase I and Phase II remedial activities, approximately 1,750 tons of non-hazardous special waste was excavated, manifested and transported to the CID RDF Bio Soil Facility. Approximately 810 tons of non-hazardous source material was excavated, manifested and transported to the CID RDF #4 disposal facility. Both disposal facilities are owned and operated by Waste Management and are located in Calumet City, Illinois. Appendix G presents tables summarizing Phase I and Phase II remedial action disposal quantities of special waste and source material. Phase I and Phase II remedial action manifests are presented in the *Remedial Action Disposal Quantities* (Burns & McDonnell 2003b).

2.3.1 Phase I

In January 2003, Phase I remedial activities began in the southeastern portion of the Site with source material removal. This excavation was performed sequentially in cells 1 through 6 using a temporary shoring system and covering an area approximately 50-feet by 30-feet in size. Excavation cells are presented in Figure 3.

Excavation cells were overlapped to assure complete removal of source material. Fill material removed from this area consisted of heavily impacted sand, gravel, and cinders. Slight odors, mottling, and staining were observed within the native clay encountered at 10 feet bgs; therefore, excavation continued to visually unimpacted native clay, which was encountered at 12 feet bgs. Impacts were observed at the property line. While the heavily impacted fill material was observed along the northeastern property line, impacts were less significant along the southeastern and southwestern property lines.

Foaming was performed to suppress odors throughout source removal activities. In addition, conditioned flyash was mixed with heavily impacted materials prior to being excavated. Once each cell was excavated, a plastic liner was placed along the inside of the panels and at the bottom of the excavation to prevent potential migration back into the remediated cell. Once the plastic liner was in place, each cell was backfilled with flowable grout in one-foot lifts to 2 feet bgs. The flowable grout utilized at the Site was Ozinga Mix 1877 (slump 6.0) with non-chloride accelerator to facilitate rapid curing and avoid freezing during the cold weather.

During cell 1 backfill activities, each lift was allowed to cure for 24-hours before panels were lifted and another lift was placed. Samples were collected from the flowable fill for each cell and sent to Patrick Engineering, Inc. in Lisle, Illinois for 5-hour, 6-hour, 8-hour and 12-hour unconfined compressive strength testing. Based on results of cell 1 compressive strength tests, the number of lifts per day was increased to two for cells 2 through 6, occurring at the beginning and end of the work day and allowing for 8 hours of curing. In addition, samples were collected and sent to Patrick Engineering, Inc. for 48-hour and 28-day hydraulic conductivity testing. No flow was observed after two weeks of attempting to saturate the samples, indicating that the cured flowable fill was impermeable. Compressive strength and hydraulic conductivity test results are presented in Appendix C. At the end of each work day, plastic lining and concrete blankets were placed on top of the grout to avoid freezing during cold weather. Once the final lift cured, each panel and corner of the temporary shoring system was removed, CA6 was placed on top of the cured grout and excavation of the adjoining cell began.

In April 2003, following source removal activities, the excavation to remove surface soil began immediately north of cell 6 in an area approximately 90-feet by 30-feet in size. Fill material removed from this area consisted of asphalt, sand, cinders and brick fragments. Based on visual observations and confirmation sampling results, excavation was extended to 5 feet bgs in a small area (approximately 15-feet by 15-feet in size) directly north of cell 6. Excavation continued north and east at 3 feet bgs up to the former location of the high pressure gas main. During excavation to 3 feet bgs, a portion of the 2,500,000 ft^3 gas holder wall was encountered intact, extending out from under Sam's Wine and Spirits building. Hand-digging was performed around the concrete holder wall and the concrete holder bottom was determined to be intact at 5 feet bgs. The holder was visually clean and no odors were observed. Fill material consisting of clay with cinders was removed from inside the holder to 3 feet bgs. Impacts were not observed at the property line in this area.

Backfill consisting of CA6 was placed and compacted across the site in 1-foot lifts. Letters provided by Vulcan Materials Company and Material Service Corporation guaranteeing clean material are presented in Appendix D. Compaction testing was performed using 90% modified proctor criteria throughout CA6 backfill activities. Results included wet density, moisture, dry density, percent moisture and percent compaction. Compaction testing was performed by a certified Troxler® operator and transporter using a Troxler® surface moisture-density gauge. Troxler® certification is also presented in Appendix D.

Abandoned MGP piping was encountered at various depths throughout the Site. For disposal purposes, polychlorinated biphenyl (PCB) wipes (WP1-PCB-24PIPE-012203 and WP1-PCB-36PIPE-022503) were collected from a 24-inch pipe removed from cell 1 and a 36-inch pipe removed from cell 3, respectively. Both samples were sent to STAT Analysis Corporation (STAT) of Chicago, Illinois for chemical analyses. Analytical results for both samples were non-detect and are presented in Appendix E. In addition, three (3) asbestos samples (WP1-1A-001, WP1-2A-001, and WP1-3A-001) were collected from a 36-inch pipe that was removed from cell 3 and six (6) asbestos samples (WP1-4A-001, WP1-4B-001, WP1-4C-001, WP1-5A-001, WP1-5B-001, and WP1-5C-001) were collected from a 24-inch pipe, which ran north-south along the sidewalk and was removed during the 3-foot excavation. Asbestos samples were also sent to STAT

for chemical analyses. Analytical results for asbestos samples were non-detect and are presented in Appendix F. In accordance with the *ROR/RAP* (Burns & McDonnell 2003a), piping greater than 12 inches in diameter was stockpiled and picked up by General Iron for recycling. All other piping encountered within the excavation was stockpiled, loaded and disposed of with excavated soil. Piping which remained in place and continued offsite was capped using sandbags, grout or a combination thereof.

2.3.2 Phase II

In July 2003, Phase II remedial action activities began following the relocation of the high pressure gas main to a location immediately outside the Site. Phase II activities consisted of surface soil (0 to 3 feet bgs) removal on the remaining northwestern portion of the Site consisting of a 125-foot by 30-foot excavation area. Fill material removed from this area consisted of asphalt, sand, cinders and brick fragments. Impacts were not observed at the property line.

Backfill consisting of CA6 was placed and compacted across the excavation at 1-foot lifts. Letters provided by Vulcan Materials Company and Material Service Corporation guaranteeing clean material are presented in Appendix D. Compaction testing was performed using 90% modified proctor throughout CA6 backfill activities. Results included wet density, moisture, dry density, percent moisture and percent compaction. Compaction testing was performed by a certified Troxler® operator and transporter using a Troxler® surface moisture-density gauge. Troxler® certification is also presented in Appendix D.

2.4 CONFIRMATION SOIL SAMPLING

Confirmation soil sampling was performed during Phase I remedial action activities to verify that source material exceeding a TPH concentration of 2,000 mg/kg was removed. During both Phase I and Phase II, samples were collected to evaluate SPLP iron and SPLP manganese to determine if the Tier 1 soil to groundwater migration remediation objectives are exceeded.

Five aliquots of equal volume were collected from each excavation area and composited into one representative confirmation sample. Composite samples were collected from excavation bottoms and sidewalls, where applicable, based on visual observations. Confirmation samples were sent to the SIMALABS International analytical laboratory (SIMALABS) of Merrillville, Indiana for 2-day turnaround time analyses. Analytical data sheets and validation memorandum are presented in the *Remedial Action Sampling Data* (Burns & McDonnell 2003c). Table 1 presents a comparison of Phase I and Phase II confirmation soil sampling results to applicable remediation objectives. Figure 3 presents confirmation soil sample locations.

2.4.1 Phase I

Confirmation samples C1 through C6 were collected at the bottom of each cell (12 feet bgs) and analyzed for TPH, SPLP iron and SPLP manganese. In addition, confirmation sample C7-001 was collected at the bottom of the 5-foot excavation and analyzed for TPH only, and confirmation sample C8-001 was collected at the bottom of the 3-foot excavation and analyzed for SPLP iron and SPLP manganese. TPH analytical results of

confirmation samples C1 through C7 were all non-detect, with the exception of the diesel range organics (DRO) concentration in C6-001. Sample C6-001 contained 170 mg/kg DRO, which is below the TPH remediation objective of 2,000 mg/kg. Based on visual observations, additional confirmation samples were collected from the north wall of cell 5 (C5-NW-001) and the north and west walls of cell 6 (C6-NW-001 and C6-SW-001, respectively) and were analyzed for TPH. Confirmation sample C6-NW-001 exceeded the TPH remediation objective of 2,000 mg/kg at a concentration of 4,410 mg/kg. Therefore, excavation continued north of cell 6 to 5 feet bgs, where confirmation samples C6-NW-002 and C7-001 were collected from the north wall and the excavation-bottom, respectively, and analyzed for TPH only. Both confirmation samples comply with the 2,000 mg/kg remediation objective.

The SPLP iron concentration in confirmation sample C1-001 was 6.7 mg/l, which exceeds the remediation objective of 5.0 mg/l. However, because the result was suspect, the sample was reanalyzed. The reanalysis concentration of 2.0 mg/l and the average concentration of the two analyses, which is 4.35 mg/l, are both below the 5.0 mg/l remediation objective. SPLP iron results of confirmation samples ranged from 0.22 mg/l to 3.0 mg/l, which are all below the 5.0 mg/l remediation objective. In addition, SPLP manganese results of confirmation samples ranged from non-detect at 0.002 mg/l to 0.082 mg/l, which are below the remediation objective of 10 mg/l, respectively. Therefore, all confirmation samples from Phase I are below established Tier 1 soil to groundwater migration remediation objectives.

2.4.2 Phase II

Confirmation samples C9-001 and C10-001 were collected at the bottom of the 3-foot excavation and analyzed for SPLP iron and SPLP manganese. The SPLP iron concentration in C9-001 of 6.3 mg/l exceeded the remediation objective of 5.0 mg/l. This result seemed suspect based on visual observations and therefore, the sample was reanalyzed. The reanalysis of SPLP iron detected a concentration of 5.2 mg/l. Confirmation sample C9-001 was then analyzed to determine the corresponding total iron concentration. The corresponding total iron concentration was 15,000 mg/kg, which is below the metropolitan statistical area (MSA) background concentration and remediation objective of 15,900 mg/kg. The SPLP iron concentration in C10-001 of 1.2 mg/l is below the remediation objective of 5.0 mg/l.

SPLP manganese results of confirmation samples C9-001 and C10-001 were non-detect at a concentration of 0.002 mg/l, below the remediation objective of 10 mg/l. Therefore, all confirmation samples from Phase II are below established Tier 1 Class II soil to groundwater migration remediation objectives.

2.5 MANAGEMENT OF WATER FROM EXCAVATIONS

A majority of the abandoned MGP piping encountered during Phase I remedial action activities contained water. When the pipes were broken for removal, water that accumulated in the excavation areas was immediately pumped into a vacuum truck for offsite disposal. When possible, water was pumped directly from the pipes prior to their removal. A total of 28,450 gallons of water were removed from excavations and pipes within the excavations to a vacuum truck, manifested and transported to CID Biological Treatment Facility, which is owned and operated by Waste Management and located in Calumet City, Illinois. A

summary table of Phase I and Phase II remedial action water disposal quantities is also presented in Appendix G. Phase I and Phase II remedial action water manifests are presented in the *Remedial Action Disposal Quantities* (Burns & McDonnell 2003c).

2.6 DEMOBILIZATION AND SITE RESTORATION

Upon completion of Phase I and Phase II remedial action activities, the following cleanup and site restoration activities were performed:

- Restoration of Site to original grade;
- Removal of temporary fabric and fencing;
- Removal of temporary onsite office trailer; and
- Demobilization of equipment used during remedial action activities.

* * * * *

3.0 RESULTS

Remedial action activities performed on a portion of Willow Street Station removed all source material and soil to meet industrial/commercial remediation objectives. In addition, any perched groundwater with Tier 1 Class II groundwater ingestion exceedences was removed during the remedial action. Although not required in the *ROR/RAP* (Burns & McDonnell 2003a), confirmation samples indicated the Tier 1 soil to groundwater migration remediation objectives have been met at this Site. TPH confirmation samples indicated all source material has been removed at the Site. Since visual impacts were observed along the northeastern, southeastern and southwestern property lines, flowable grout, tested to be impermeable, was backfilled along these property lines to ensure that no potential migration back onto the Site will occur. Figure 4 presents the final excavation layout.

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4.0 SPECIAL CONDITIONS

The remedial action is intended to be a final action. Future use of the portion of Willow Street Station will be industrial/commercial; therefore, land use is limited and special conditions apply to the Site. Figure 5 presents the post-remediation site layout.

All remaining soil complies with established remediation objectives; therefore, the remedial action is intended to be a final action. Three feet of imported soil exists across the Site for industrial/commercial usage of the property. There are no construction worker concerns from 0 to 10 feet bgs. The following special conditions apply to the Site:

- Future use of the property will be industrial/commercial; and
- Soil excavated greater than 3 feet bgs should not be placed within the upper 3 feet of the Site. The excavated soil should be handled according to applicable regulations.

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5.0 CONCLUSIONS

The remediation objectives established for a portion of Willow Street Station Site in the *ROR/RAP* (Burns & McDonnell 2003a) were met as a result of remedial activities as described in Section 2.0 of this report. All source material with a TPH concentration greater than 2,000 mg/kg was removed from the Site, surface soil that exceeded industrial/commercial Tier 1 remediation objectives was replaced with imported backfill. Remaining subsurface soil down to 10 feet bgs meets industrial/commercial worker and construction worker Tier 1 remediation objectives. All impacted perched groundwater has been removed and soil remaining meets Tier 1 soil to groundwater remediation objectives; therefore, the Site also meets groundwater ingestion remediation objectives.

The data within this RACR is accurate and complete. With the implementation of the special conditions discussed in Section 4.0 of this report, no further remediation is necessary at a portion of Willow Street Station Site.

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6.0 REFERENCES

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TABLE
REMEDIAL ACTION COMPLETION REPORT
A PORTION OF WILLOW STREET STATION

Table 1
Confirmation Sample Analytical Results
A Portion of Willow Street Station

Analyses	Remediation Objective	Sample Location and Depth (feet below ground surface)/Concentration				
		C1-001 (12)	C2-001 (12)	C3-001 (12)	C4-001 (12)	C5-NW-001 (6-8)
TPH (mg/kg)						
Diesel Range Organics		10 U	10 U	9.6 U	9.8 U	58
Gasoline Range Organics		10 U	10 U	9.6 U	9.8 U	30
Motor Oil		100 U	100 U	96 U	98 U	130 U
Total	2,000	120 U	120 U	115 U	118 U	218
TPH as Diesel		10 U	10 U	9.6 U	9.8 U	13 U
TPH as Gasoline		10 U	10 U	9.6 U	9.8 U	13 U
TPH as Motor Oil		100 U	100 U	96 U	98 U	130 U
Total	2,000	120 U	120 U	115 U	118 U	156 U
Total Iron (mg/kg)						
Total Iron	15,900	NA	NA	NA	NA	NA
SPLP Metals (mg/L)						
SPLP Iron	5.0	2.0	0.22	1.1	3.0	NA
SPLP Manganese	10.0	0.038	0.002 U	0.010	0.082	NA

Notes:

1) U - Indicates compound/analyte was analyzed for, but not detected; the associated value is the sample reporting limit.

2) NA - Not analyzed.

Table 1 (Continued)
Confirmation Sample Analytical Results
A Portion of Willow Street Station

Analyses	Remediation Objective	Sample Location and Depth (feet below ground surface)/Concentration				
		C5-001 (12)	C6-SW-001 (9)	C6-NW-001 (4)	C6-NW-002 (9)	C6-001 (12)
TPH (mg/kg)						
Diesel Range Organics		12 U	240	3400	130	170
Gasoline Range Organics		12 U	39	370	12 U	11 U
Motor Oil		120 U	120 U	640	120 U	110 U
Total	2,000	144 U	399	4410 *	262	291
TPH as Diesel		12 U	12 U	99 U	12 U	11 U
TPH as Gasoline		12 U	12 U	99 U	12 U	11 U
TPH as Motor Oil		120 U	120 U	99 U	120 U	110 U
Total	2,000	144 U	144 U	297 U	144 U	132 U
Total Iron (mg/kg)						
Total Iron	15,900	NA	NA	NA	NA	NA
SPLP Metals (mg/L)						
SPLP Iron	5.0	1.6	NA	NA	NA	2.5
SPLP Manganese	10.0	0.013	NA	NA	NA	0.002 U

Notes:
1) U - Indicates compound/analyte was analyzed for, but not detected; the associated value is the sample reporting limit.
2) NA - Not analyzed.
3) * - Value exceeds the remediation objective; therefore, excavation continued and C6-NW-002 was collected, which complied with the remediation objective.

Table 1 (Continued)
Confirmation Sample Analytical Results
A Portion of Willow Street Station

Analyses	Remediation Objective	Sample Location and Depth (feet below ground surface)/Concentration			
		C7-001 (5)	C8-001 (3-3.5)	C9-001 (3)	C10-001 (3)
TPH (mg/kg)					
Diesel Range Organics		12 U	NA	NA	NA
Gasoline Range Organics		12 U	NA	NA	NA
Motor Oil		120 U	NA	NA	NA
Total	2,000	144 U	NA	NA	NA
TPH as Diesel		12 U	NA	NA	NA
TPH as Gasoline		12 U	NA	NA	NA
TPH as Motor Oil		120 U	NA	NA	NA
Total	2,000	144 U	NA	NA	NA
Total Iron (mg/kg)					
Total Iron	15,900	NA	NA	15,000	NA
SPLP Metals (mg/L)					
SPLP Iron	5.0	NA	0.55	5.3 **	1.2
SPLP Manganese	10.0	NA	0.03	0.002 U	0.002 U

Notes:

1) U - Indicates compound/analyte was analyzed for, but not detected; the associated value is the sample reporting limit.

2) NA - Not analyzed.

3) ** - Value exceeds the remediation objective; however, the corresponding total iron concentration is below the metropolitan statistical area (MSA) background concentration (remediation objective).

FIGURES
REMEDIAL ACTION COMPLETION REPORT
A PORTION OF WILLOW STREET STATION

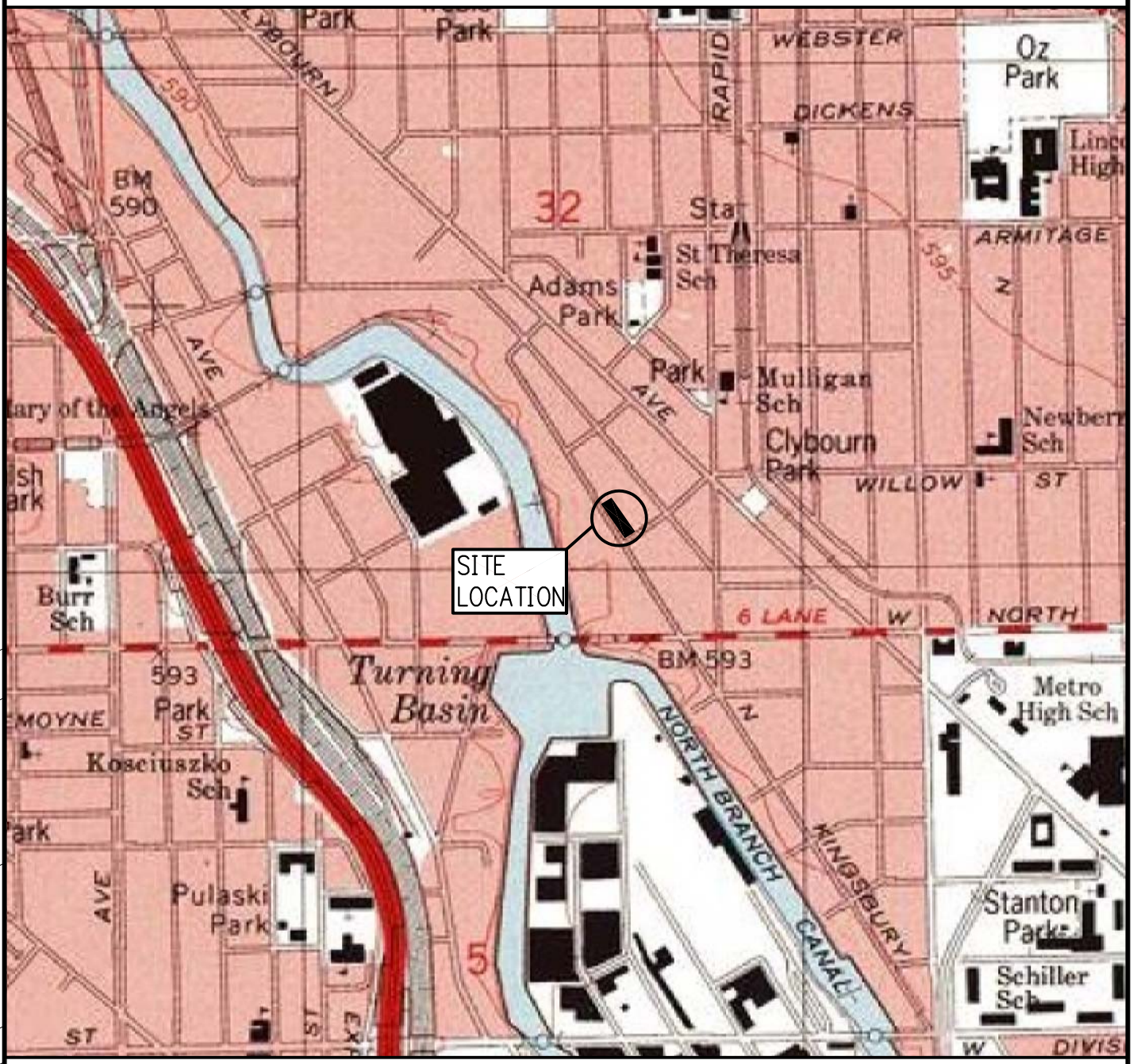
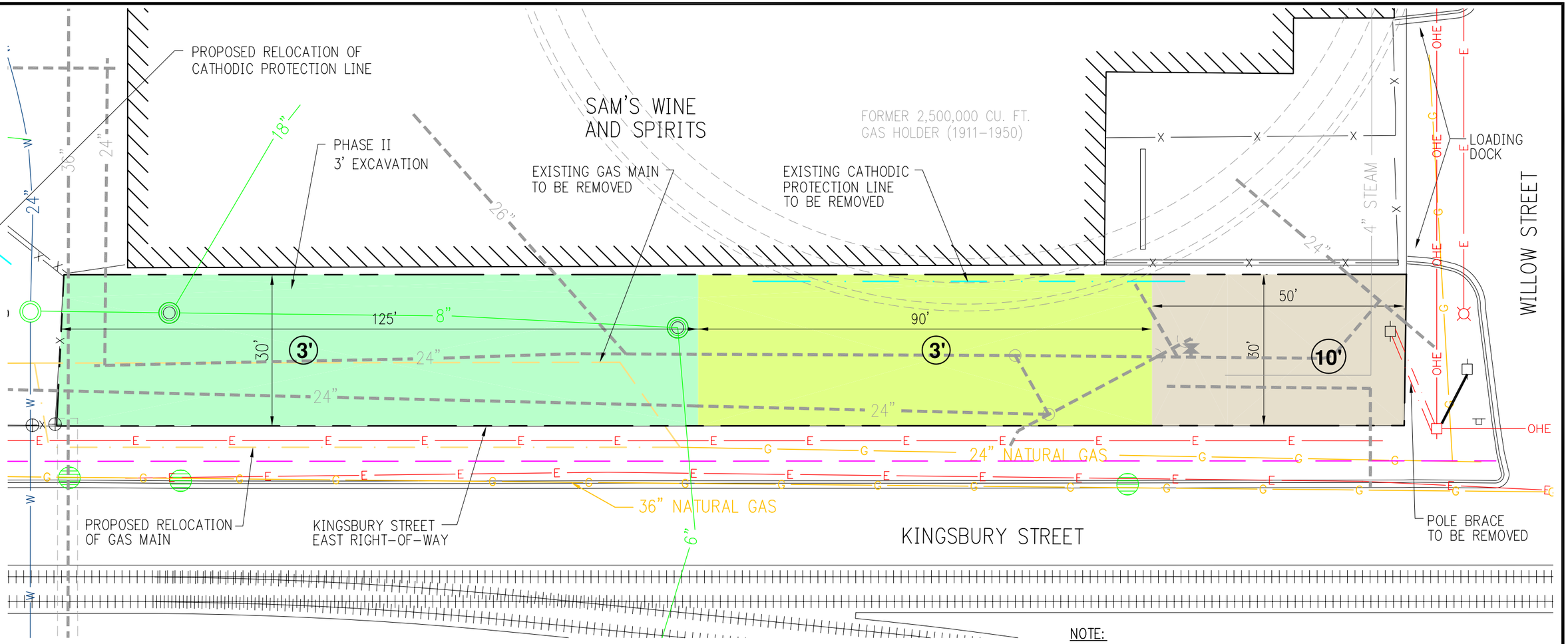


Figure 1

SITE LOCATION MAP
A PORTION OF WILLOW STREET STATION
CHICAGO, ILLINOIS

I:\PEOPLES GAS\WILLOW PARCEL 1-28020\CAD\BID\WILLOW ST STATION\PORTION OF WILLOW\RACR\SITE LOCATION



LEGEND

- PROPERTY LINE
- ABANDONED FORMER PEOPLES GAS PIPE (TO BE REMOVED AS NECESSARY)
- SEWER PIPE
- WATER PIPE
- GAS MAIN
- GAS MAIN TO BE CONSTRUCTED
- GAS MAIN TO BE REMOVED
- UNDERGROUND ELECTRICAL CONDUIT
- OVERHEAD ELECTRICAL CONDUIT
- RAILROAD TRACKS
- HISTORICAL STRUCTURES
- EXISTING CATHODIC PROTECTION LINE
- PROPOSED CATHODIC PROTECTION LINE
- APPROXIMATE LOCATION OF MCI WORLD COM/ WESTERN UNION CABLE CONDUIT
- SUPPORTING CABLES (OVERHEAD)
- POLE BRACE
- LIGHT POLE
- POWER POLE
- SEWER MANHOLE
- WATER VALVE VAULT
- CATCH BASIN
- POLE BRACE BASE
- EXISTING BUILDING
- 10' — IDENTIFIED DEPTH OF EXCAVATION
- PHASE I – 3' EXCAVATION
- PHASE I – 10' EXCAVATION
- PHASE II – 3' EXCAVATION

NOTE:

1. LOCATION OF UTILITIES BASED ON HISTORIC DIAGRAM PROVIDED BY PEOPLES GAS DIGGER UTILITY SEARCH, AND RESPONSES FROM A CDOT/OUC UTILITY SEARCH PERFORMED ON JUNE 4, 2002.

NORTH

20 0 20 40

SCALE IN FEET

Burns & McDonnell SINCE 1898

Figure 2

INITIAL EXCAVATION LAYOUT
A PORTION OF WILLOW STREET STATION
CHICAGO, ILLINOIS

I:\PEOPLES GAS\WILLOW PARCEL 1-28020\CAD\BID\WILLOW ST STATION\PORTION OF WILLOW\RAC

SAM'S WINE
AND SPIRITS

FORMER 2,500,000 CU. FT.
GAS HOLDER (1911–1950)

LOADING
DOCK

WILLOW STREET

KINGSBURY STREET

36"

24"

26"

24"

24"

24"

3'

3'

12'

5'

C10

C9

C8

C7

C5-NW

C6-SW

C6-NW

CELL 5

CELL 3

CELL 1

CELL 6

CELL 4

CELL 2

C5

C3

C1

C6

C4

C2

C2-A

C2-B

C2-C

C2-D

C2-E

LEGEND

- A PORTION OF WILLOW STREET STATION BOUNDARY
- HAWTHORNE REGULATOR STATION BOUNDARY
- COMPOSITE CONFIRMATION SAMPLE LOCATION
- 3' IDENTIFIED DEPTH OF EXCAVATION
- EXISTING BUILDING
- OVERLAPPING EXCAVATION
- ABANDONED PIPE
- PROPERTY LINE
- RAILROAD TRACKS
- HISTORICAL STRUCTURES
- PHASE I – 3' EXCAVATION
- PHASE I – 5' EXCAVATION
- PHASE I – 12' EXCAVATION
- PHASE II – 3' EXCAVATION

NORTH

20 0 20 40

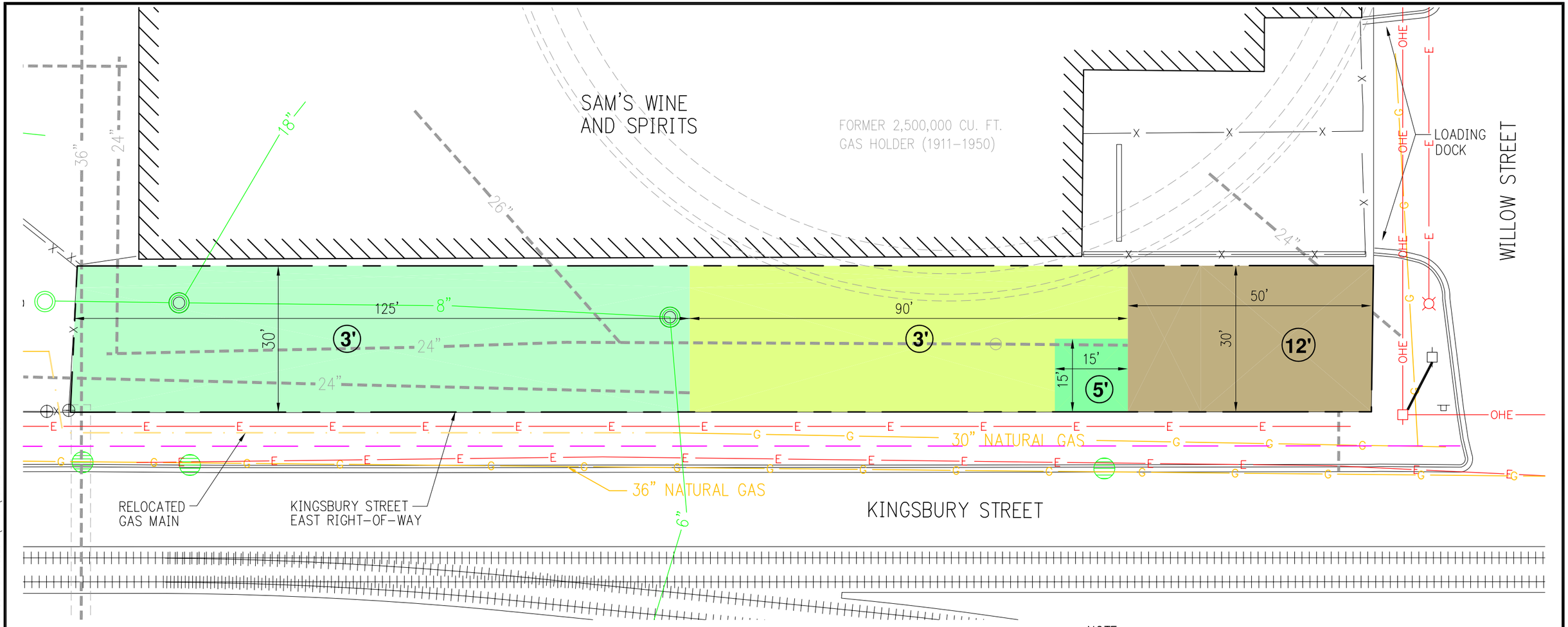
SCALE IN FEET

Burns & McDonnell
SINCE 1898

Figure 3

CONFIRMATION SOIL SAMPLING LOCATION MAP
A PORTION OF WILLOW STREET STATION
CHICAGO, ILLINOIS

I:\PEOPLES GAS\WILLOW PARCEL 1-28020\CAD\BID\WILLOW ST STATION\PORTION OF WILLOW\RACR\CONFIRM SAMPS



LEGEND

- PROPERTY LINE
- ABANDONED FORMER PEOPLES GAS PIPE
- SEWER PIPE
- GAS MAIN
- RELOCATED GAS MAIN
- UNDERGROUND ELECTRICAL CONDUIT
- OVERHEAD ELECTRICAL CONDUIT
- RAILROAD TRACKS
- APPROXIMATE LOCATION OF MCI WORLD COM/ WESTERN UNION CABLE CONDUIT
- POLE BRACE
- LIGHT POLE
- POWER POLE
- SEWER MANHOLE
- WATER VALVE VAULT
- CATCH BASIN
- EXISTING BUILDING
- 3' IDENTIFIED DEPTH OF EXCAVATION
- PHASE I – 3' EXCAVATION
- PHASE I – 5' EXCAVATION
- PHASE I – 12' EXCAVATION
- PHASE II – 3' EXCAVATION

NOTE:

1. LOCATION OF UTILITIES BASED ON HISTORIC DIAGRAM PROVIDED BY PEOPLES GAS DIGGER UTILITY SEARCH, AND RESPONSES FROM A CDOT/OUC UTILITY SEARCH PERFORMED ON JUNE 4, 2002.

NORTH

20 0 20 40

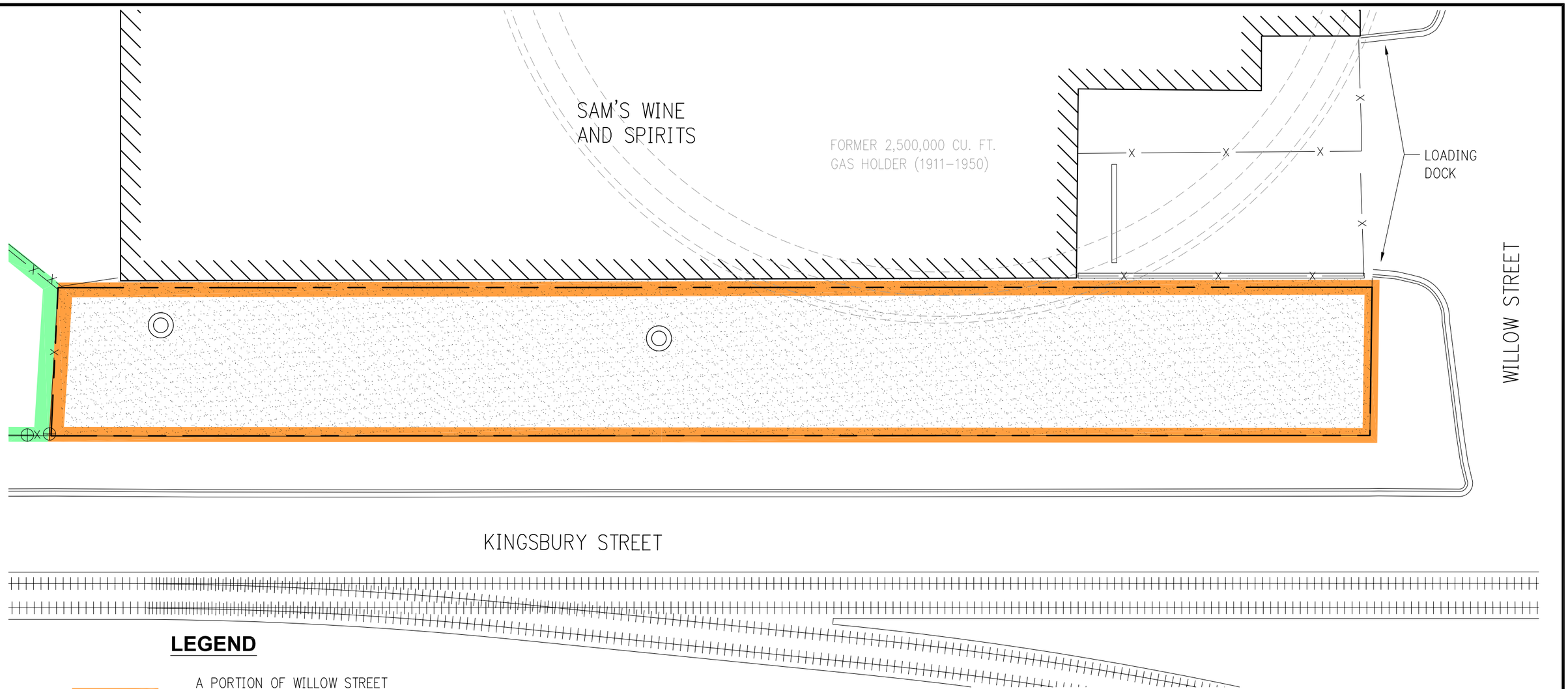
SCALE IN FEET

Burns & McDonnell SINCE 1898

Figure 4

FINAL EXCAVATION LAYOUT
A PORTION OF WILLOW STREET STATION
CHICAGO, ILLINOIS

I:\PEOPLES GAS\WILLOW PARCEL 1-28020\CAD\BID\WILLOW ST STATION\PORTION OF WILLOW\RACR\FINAL EXCAVATION



LEGEND

- A PORTION OF WILLOW STREET STATION BOUNDARY
- HAWTHORNE REGULATOR STATION BOUNDARY
- PROPERTY LINE
- RAILROAD TRACKS
- EXISTING BUILDING
- GRAVEL
- MANHOLE
- FENCE

NORTH

20 0 20 40

SCALE IN FEET

NOTES:

1. FINAL ELEVATION IS CCD=200.4 ACROSS THE SITE.
2. CITY OF CHICAGO BENCH NUMBER 4546 USED TO REFERENCE CCD ELEVATIONS AT PROPERTY.

Burns & McDonnell SINCE 1898

Figure 5

POST-REMEDIATION SITE LAYOUT
A PORTION OF WILLOW STREET STATION
CHICAGO, ILLINOIS

I:\PEOPLES GAS\WILLOW PARCEL 1-28020\CAD\BID\WILLOW ST STATION\PORTION OF WILLOW\RACR\POST REM SITE LAYOUT

APPENDIX A
PLAT OF SURVEY
REMEDIAL ACTION COMPLETION REPORT
A PORTION OF WILLOW STREET STATION

ALTA/ACSM LAND TITLE SURVEY

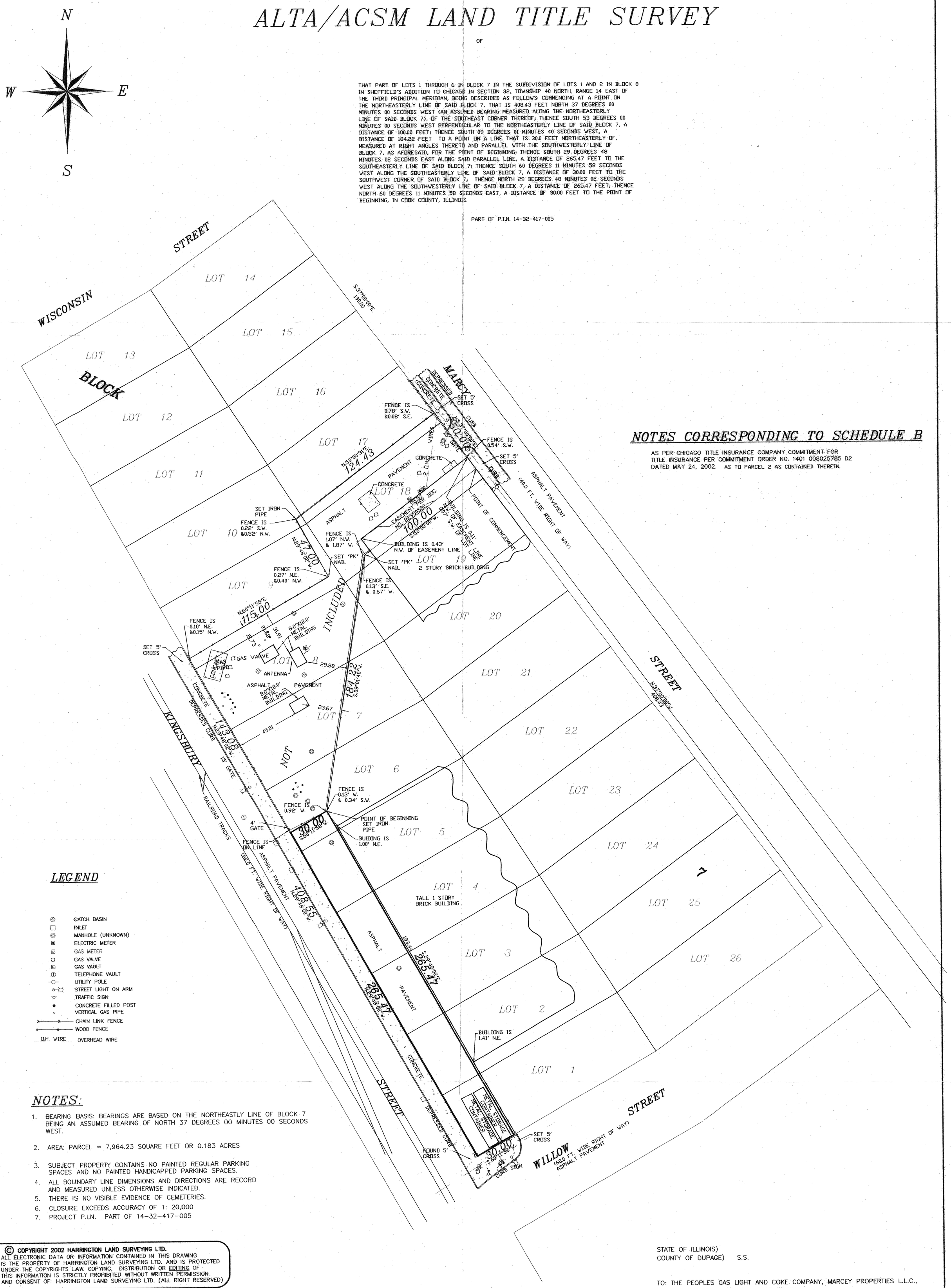
OF

THAT PART OF LOTS 1 THROUGH 6 IN BLOCK 7 IN THE SUBDIVISION OF LOTS 1 AND 2 IN BLOCK 8 IN SHEFFIELD'S ADDITION TO CHICAGO IN SECTION 32, TOWNSHIP 40 NORTH, RANGE 14 EAST OF THE THIRD PRINCIPAL MERIDIAN, BEING DESCRIBED AS FOLLOWS: COMMENCING AT A POINT ON THE NORTHEASTERLY LINE OF SAID BLOCK 7, THAT IS 408.43 FEET NORTH 37 DEGREES 00 MINUTES 00 SECONDS WEST (AN ASSUMED BEARING MEASURED ALONG THE NORTHEASTERLY LINE OF SAID BLOCK 7), OF THE SOUTHEAST CORNER THEREOF; THENCE SOUTH 53 DEGREES 00 MINUTES 00 SECONDS WEST PERPENDICULAR TO THE NORTHEASTERLY LINE OF SAID BLOCK 7, A DISTANCE OF 100.00 FEET; THENCE SOUTH 09 DEGREES 01 MINUTES 40 SECONDS WEST, A DISTANCE OF 184.22 FEET TO A POINT ON A LINE THAT IS 30.0 FEET NORTHEASTERLY OF, MEASURED AT RIGHT ANGLES THERETO AND PARALLEL WITH THE SOUTHWESTERLY LINE OF BLOCK 7, AS AFORESAID, FOR THE POINT OF BEGINNING; THENCE SOUTH 29 DEGREES 48 MINUTES 02 SECONDS EAST ALONG SAID PARALLEL LINE, A DISTANCE OF 265.47 FEET TO THE SOUTHEASTERLY LINE OF SAID BLOCK 7; THENCE SOUTH 60 DEGREES 11 MINUTES 58 SECONDS WEST ALONG THE SOUTHEASTERLY LINE OF SAID BLOCK 7, A DISTANCE OF 30.00 FEET TO THE SOUTHWEST CORNER OF SAID BLOCK 7; THENCE NORTH 29 DEGREES 48 MINUTES 02 SECONDS WEST ALONG THE SOUTHWESTERLY LINE OF SAID BLOCK 7, A DISTANCE OF 265.47 FEET; THENCE NORTH 60 DEGREES 11 MINUTES 58 SECONDS EAST, A DISTANCE OF 30.00 FEET TO THE POINT OF BEGINNING, IN COOK COUNTY, ILLINOIS.

PART OF P.I.N. 14-32-417-005

NOTES CORRESPONDING TO SCHEDULE B

AS PER CHICAGO TITLE INSURANCE COMPANY COMMITMENT FOR TITLE INSURANCE PER COMMITMENT ORDER NO. 1401 008025785 D2 DATED MAY 24, 2002. AS TO PARCEL 2 AS CONTAINED THEREIN.



LEGEND

- CATCH BASIN
- INLET
- MANHOLE (UNKNOWN)
- ELECTRIC METER
- GAS METER
- GAS VALVE
- GAS VAULT
- TELEPHONE VAULT
- UTILITY POLE
- STREET LIGHT ON ARM
- TRAFFIC SIGN
- CONCRETE FILLED POST
- VERTICAL GAS PIPE
- CHAIN LINK FENCE
- WOOD FENCE
- O.H. WIRE OVERHEAD WIRE

NOTES:

1. BEARING BASIS: BEARINGS ARE BASED ON THE NORTHEASTLY LINE OF BLOCK 7 BEING AN ASSUMED BEARING OF NORTH 37 DEGREES 00 MINUTES 00 SECONDS WEST.
2. AREA: PARCEL = 7,964.23 SQUARE FEET OR 0.183 ACRES
3. SUBJECT PROPERTY CONTAINS NO PAINTED REGULAR PARKING SPACES AND NO PAINTED HANDICAPPED PARKING SPACES.
4. ALL BOUNDARY LINE DIMENSIONS AND DIRECTIONS ARE RECORD AND MEASURED UNLESS OTHERWISE INDICATED.
5. THERE IS NO VISIBLE EVIDENCE OF CEMETERIES.
6. CLOSURE EXCEEDS ACCURACY OF 1: 20,000
7. PROJECT P.I.N. PART OF 14-32-417-005

® HARRINGTON LAND SURVEYING LTD.
EST. 1970
SURVEYORS OF ILLINOIS & WISCONSIN
2381 LEEWARD LANE
HANOVER PARK, IL. 60133
VOICE (630) 830-4894
FAX (630) 830-5525

ORDERED BY: THE GAS LIGHT AND COKE COMPANY

SCALE: 1" = 30'

SURVEY NO.: 086-02A
DRAWN BY: RJM
FILE NAME: 086-02A.DWG

COMMON ADDRESS: 1740 N. MARCEY STREET CHICAGO, ILLINOIS

For Building Restrictions and Easements refer to your Abstract Deed, Guarantee Policy and Local Ordinances. COMPARE ALL POINTS BEFORE BUILDING AND AT ONCE REPORT ANY DIFFERENCE

STATE OF ILLINOIS)
COUNTY OF DUPAGE) S.S.

TO: THE PEOPLES GAS LIGHT AND COKE COMPANY, MARCEY PROPERTIES L.L.C., AND CHICAGO TITLE INSURANCE COMPANY.

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE (1) IN ACCORDANCE WITH "MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS", JOINTLY ESTABLISHED AND ADOPTED BY ALTA, ACSM AND NSPS IN 1997, AND PURSUANT TO THE ACCURACY STANDARDS (AS ADOPTED BY ALTA AND ACSM AND IN EFFECT ON THE DATE OF THIS CERTIFICATION) OF AN URBAN SURVEY.

DATE: JUNE 18, 2002

ILLINIOS PROFESSIONAL LAND SURVEYOR NO. 2436

APPENDIX B
REMEDIAL ACTION PHOTOGRAPHS
REMEDIAL ACTION COMPLETION REPORT
A PORTION OF WILLOW STREET STATION

A Portion of Willow Street Station
Date: January 20, 2003

Description:

Excavation of surface soil in cell 1 located in the southeast corner of the Site.

A Portion of Willow Street Station
Date: January 20, 2003

Description:

East panel of shoring system installed in cell 1. Plastic liner placed over excavation to limit odors.

A Portion of Willow Street Station
Date: June 20, 2003

Description:

View 3-foot excavation in cell 1 with east and south panels of shoring system installed. Visual impacts observed in soil and water from broken pipe.

A Portion of Willow Street Station
Date: January 20, 2003

Description:

View of silt fabric on fence next to the loading dock outside northeastern property boundary.

A Portion of Willow Street Station
Date: January 21, 2003

Description:

View of excavation in cell 1 after foaming. South, east and west panels of shoring system installed.

A Portion of Willow Street Station
Date: January 22, 2003

Description:

View of installed shoring system in cell 1.

A Portion of Willow Street Station
Date: January 22, 2003

Description:

View of 24”-diameter cast-iron pipe removed during excavation of cell 1.

A Portion of Willow Street Station
Date: January 24, 2003

Description:

View of visually clean native clay bottom of cell 1 at 12 feet bgs.

A Portion of Willow Street Station
Date: January 27, 2003

Description:

View of first flowable grout pour in cell 1.

A Portion of Willow Street Station
Date: January 27, 2003

Description:

View of concrete blankets placed on top of curing grout in cell 1 overnight.

A Portion of Willow Street Station
Date: February 6, 2003

Description:

View of excavator direct-loading soil excavated from cell 2 for offsite disposal.

A Portion of Willow Street Station
Date: February 21, 2003

Description:

View of former MGP 36”-diameter pipe removed from cell 3.

A Portion of Willow Street Station
Date: February 24, 2003

Description:

View of former plastic lining placed in cell 3 prior to backfill with flowable grout.

A Portion of Willow Street Station
Date: February 28, 2003

Description:

View of cell 3 backfilled to 2 feet bgs after removal of shoring system.

A Portion of Willow Street Station
Date: March 13, 2003

Description:

View of foaming during excavation of surface soil in cell 5.

A Portion of Willow Street Station
Date: March 14, 2003

Description:

View of MGP pipe removed during excavation of cell 5.

A Portion of Willow Street Station
Date: March 19, 2003

Description:

View of backfilled cell 5 lined with plastic to prevent potential migration.

A Portion of Willow Street Station
Date: March 21, 2003

Description:

View of foamed excavation in cell 6 lined prior to placement of shoring system.

A Portion of Willow Street Station
Date: March 21, 2003

Description:

View of shoring system installed in cell 6 prior to subsurface excavation.

A Portion of Willow Street Station
Date: March 24, 2003

Description:

View of foaming and dewatering of pipes inside cell 6.

A Portion of Willow Street Station
Date: March 31, 2003

Description:

View of cell 6 backfilled to 2 feet bgs following final flowable grout pour.

A Portion of Willow Street Station
Date: April 1, 2003

Description:

View of excavation to 3 feet bgs north of cell 5.

A Portion of Willow Street Station
Date: April 2, 2003

Description:

View of concrete gas holder wall uncovered intact during excavation to 3 feet bgs north of cell 5.

A Portion of Willow Street Station
Date: April 3, 2003

Description:

View of abandoned pipe removed from along the sidewalk during 3-foot excavation.

A Portion of Willow Street Station
Date: April 3, 2003

Description:

View of 3-foot excavation north of source area removal.

A Portion of Willow Street Station
Date: April 8, 2003

Description:

View of site compacted to grade and abandoned pipe being cut for removal and disposal offsite.

A Portion of Willow Street Station
Date: July 28, 2003

Description:

View of site following remedial action activities and demobilization.

APPENDIX C
COMPRESSIVE STRENGTH AND HYDRAULIC CONDUCTIVITY RESULTS
REMEDIAL ACTION COMPLETION REPORT
A PORTION OF WILLOW STREET STATION

COMPRESSIVE STRENGTH RESULTS

Table C-1
Compressive Strength Testing Results
A Portion of Willow Street Station

Sample ID		Set Time	Moisture Content (%)	Dry Density (pcf)	Wet Density (pcf)	Compressive Strength (tsf)	Strain at Failure (%)
CS5	Cell 1	5 hours	11.5	111.8	124.7	1.086	0.207
CS6	Cell 1	6 hours	11.5	111.0	123.8	1.88	0.16
CS8	Cell 1	8 hours	11.8	110.2	123.2	1.47	0.16
CS12	Cell 1	12 hours	11.8	105.3	117.7	3.089	0.12
CS16	Cell 1	16 hours	12.0	105.4	118.0	2.99	0.059
CS28	Cell 1.1	28 days	5.7	115.2	121.8	15.7	0.15
CS28	Cell 1.2	28 days	5.7	115.7	122.3	12.28	0.14
CS28	Cell 2.1	28 days	5.2	116.0	122.0	15.11	0.14
CS28	Cell 2.2	28 days	5.5	116.5	122.9	14.35	0.14
CS28	Cell 3.1	28 days	5.0	114.3	120.0	12.7	0.14
CS28	Cell 3.2	28 days	5.1	113.9	119.7	13.89	0.14
CS28	Cell 4.1	28 days	7.2	104.7	112.2	28.34	0.14
CS28	Cell 4.2	28 days	7.5	102.8	110.5	22.7	0.48
CS28	Cell 5.1	28 days	5.4	115.1	121.3	26.35	0.16
CS28	Cell 5.2	28 days	5.3	111.8	117.7	26.4	0.15
CS28	Cell 6.2	28 days	8.3	106.5	115.3	30.4	0.19

Notes:
(1) Wet Density = Dry Density x (1+ Moisture Content/100)
(2) pcf = pounds per cubic foot
(3) tsf = tons per square foot

PATRICK
ENGINEERING INC.

4970 Varsity Drive
Lisle, IL 60532-4101
Tel: (630) 795-7200
Fax: (630) 724-1681

6/18/2003

Andy Jazdainian
Burns & McDonnele
2601.W. 22nd St.
Oak Brook, IL
60523

Reference: Willow Parcel CS 5,6,8,12,& 16

Dear Andy:

Enclosed please find the revised unconfined results with the strength vs. strain added as you requested.

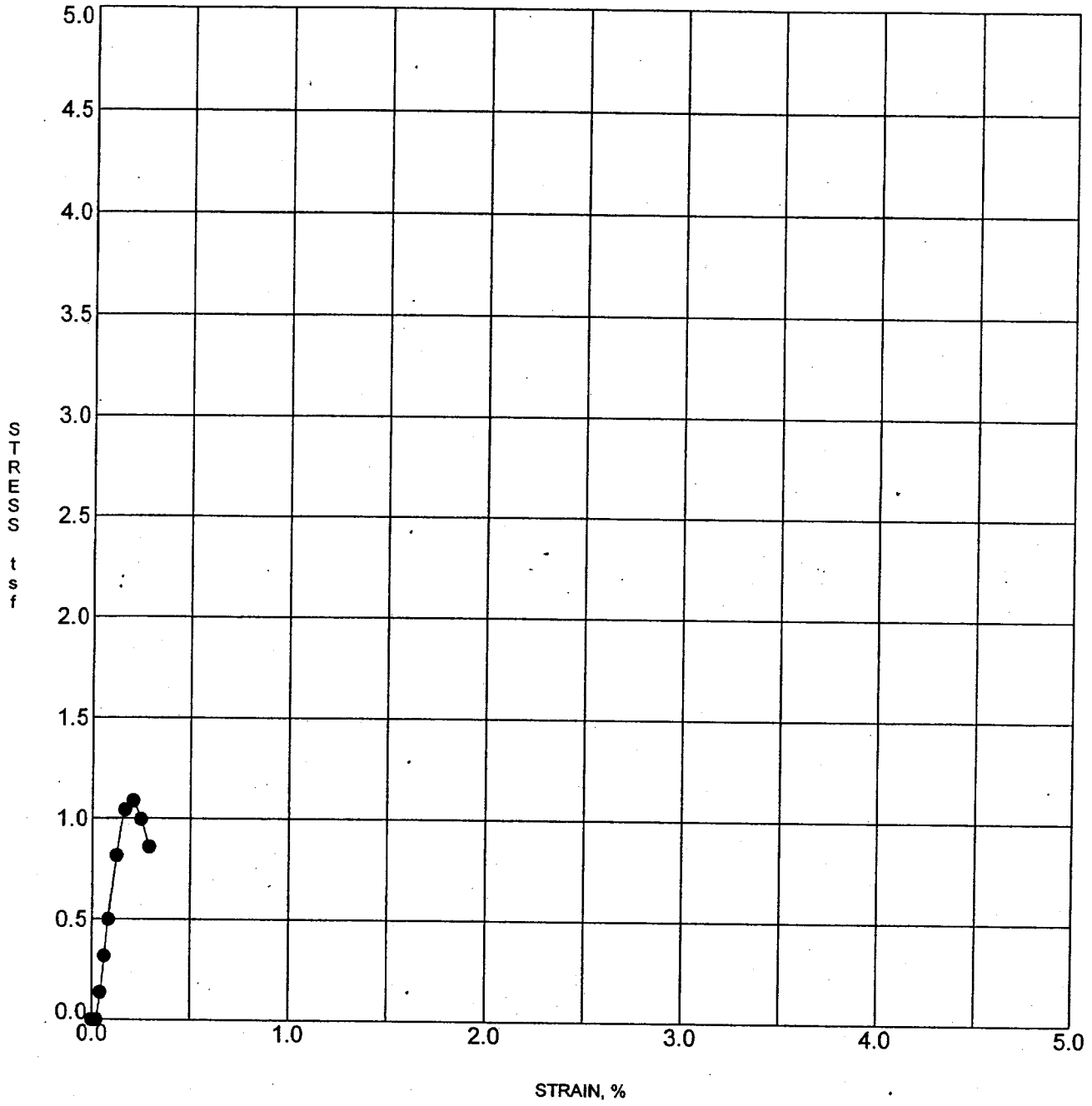
Patrick appreciates the opportunity to provide testing services to you, and we look forward to working with Burns & McDonnell Engineering Company again in the near future. If you have questions regarding the enclosed testing results, please call 630 795-7200.

Sincerely,

PATRICK ENGINEERING INC.

Michael Gentile
Lab Analyst

Enclosure: 5



WPI CS 5 Strength = 1.086365 TSF @ 0.2071823 % Strain

Specimen Identification		Classification	D.Den.	MC%
● WPI CS5 0.0		Consolidated Flowable Fill Cell	111.8	11.5

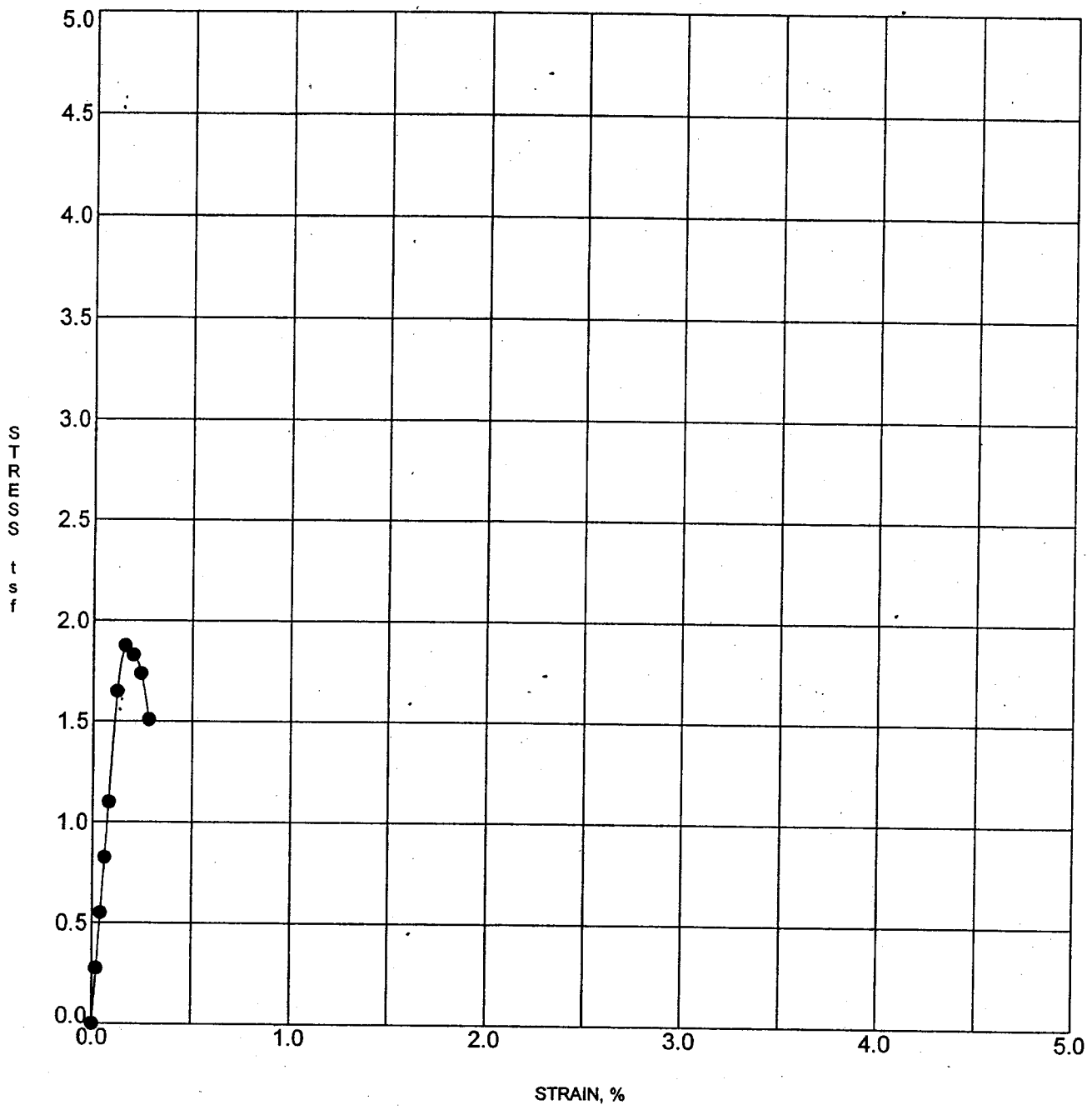
PROJECT Burns & McDonnell- Peoples Willow - JOB NO. C1000BM

DATE 06/18/03

UNCONFINED COMPRESSION TEST (ASTM D2166)

Patrick Engineering, Inc.

Testing Analyst: Results Checked By:



WPI CS 6 Strength = 1.876274 TSF @ 0.161182 % Strain

Specimen Identification		Classification	D.Den.	MC%
● WPI CS6 0.0		Consolidated Flowable Fill Cell	111.0	11.5

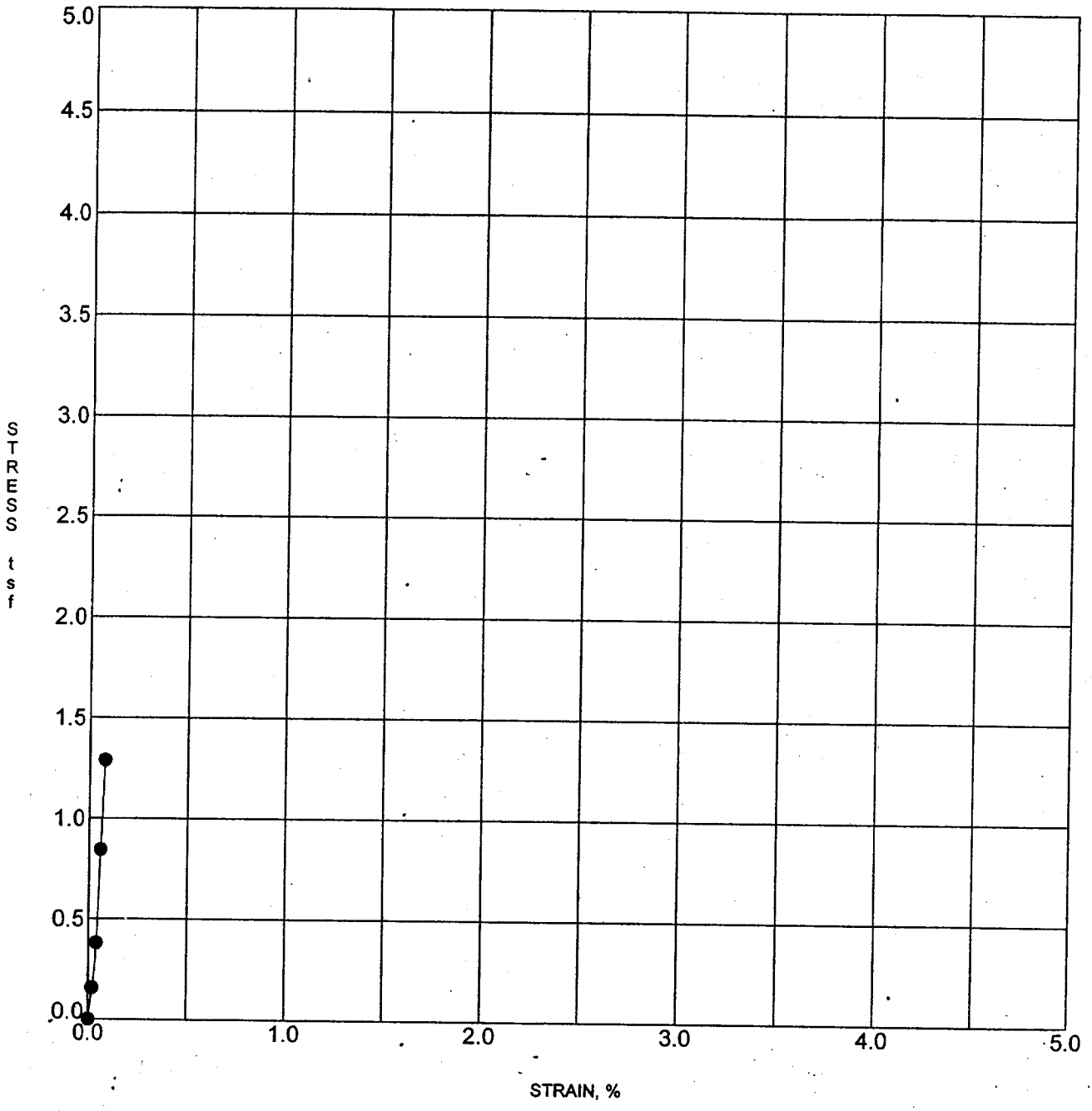
PROJECT Burns & McDonnell- Peoples Willow - JOB NO. C1000BM

DATE 06/18/03

UNCONFINED COMPRESSION TEST (ASTM D2166)

Patrick Engineering, Inc.

Testing Analyst: Results Checked By:



WPI CS 8 Strength = 1.468306 TSF @ 0.1581028 % Strain

Specimen Identification		Classification	D.Den.	MC%
● WPI CS8 0.0		Consolidated Flowable Fill Cell	110.2	11.8

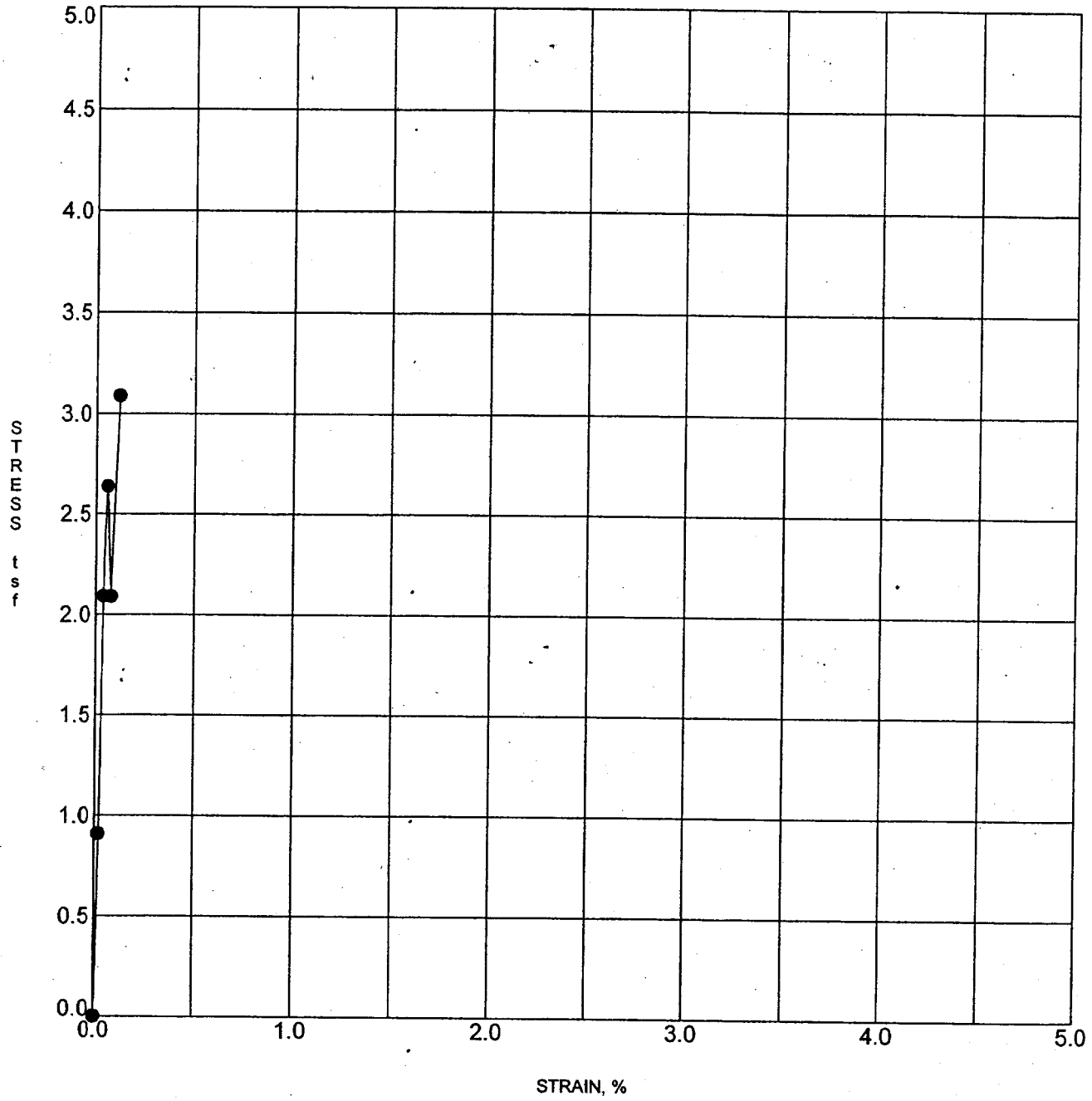
PROJECT Burns & McDonnell- Peoples Willow - JOB NO. C1000BM

DATE 06/18/03

UNCONFINED COMPRESSION TEST (ASTM D2166)

Patrick Engineering, Inc.

Testing Analyst: Results Checked By:



WPI CS 12 Strength = 3.08883 TSF @ 0.118499 % Strain

Specimen Identification		Classification	D.Den.	MC%
● WPI CS12 0.0		Consolidated Flowable Fill Cell	105.3	11.8

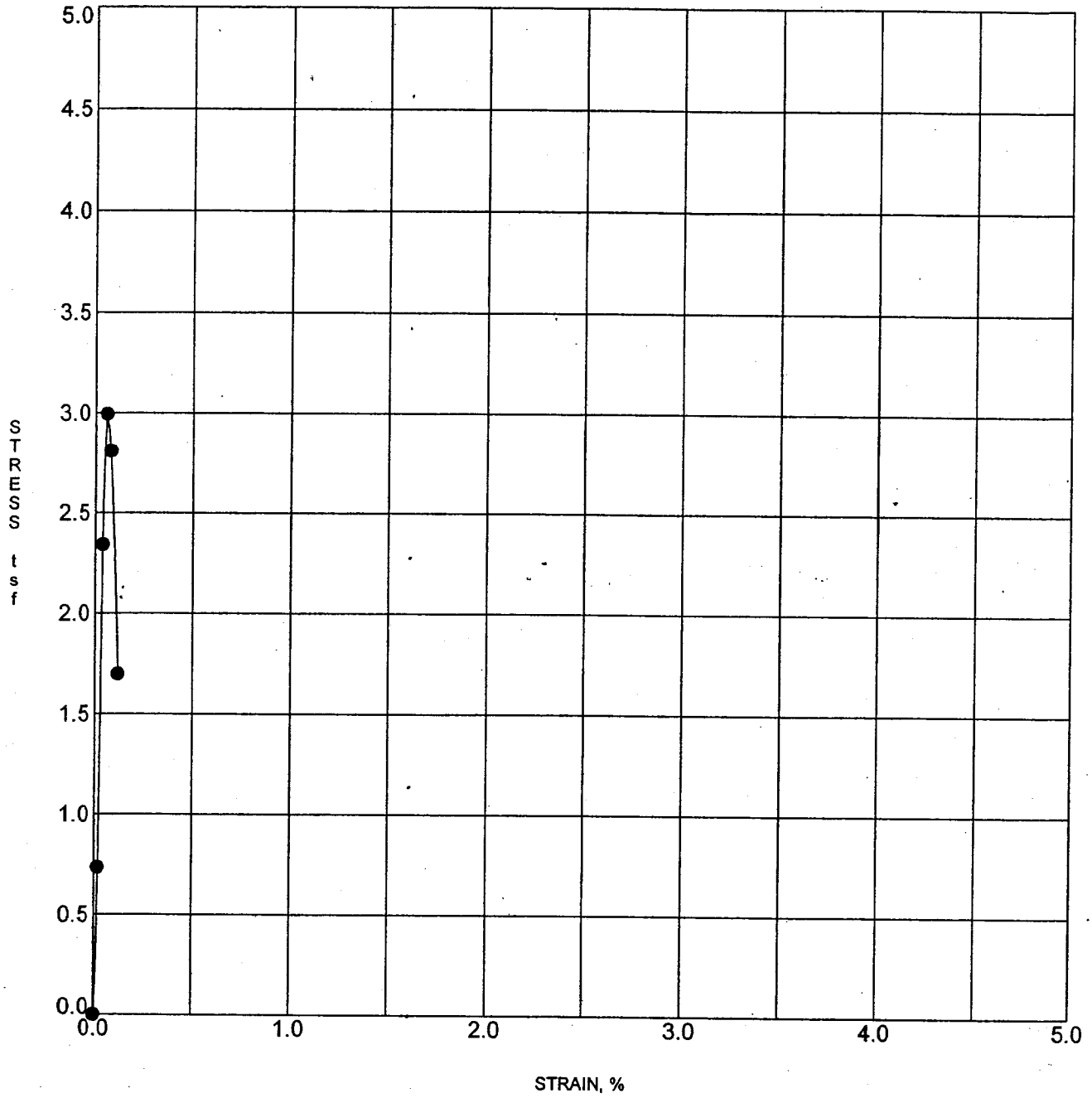
PROJECT Burns & McDonnell- Peoples Willow - JOB NO. C1000BM

DATE 06/18/03

UNCONFINED COMPRESSION TEST (ASTM D2166)

Patrick Engineering, Inc.

Testing Analyst: Results Checked By:



WPI CS16 Strength = 2.994634TSF @ 0.05928854 % Strain

Specimen Identification		Classification	D.Den.	MC%
● WPI CS16 0.0		Consolidated Flowable Fill Cell	105.4	12.0

PROJECT Burns & McDonnell- Peoples Willow - JOB NO. C1000BM

DATE 06/18/03

UNCONFINED COMPRESSION TEST (ASTM D2166)

Patrick Engineering, Inc.

Testing Analyst: Results Checked By:

Burns & McDonnell SINCE 1898

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Engineering
2601 W. 22nd St
Oak Brook, Illinois 60523
Phone: (630) 990-0300 Fax: (630) 990-0301

Attention: JOAN GONZALEZ

Laboratory: PATRICK ENGINEERING
Address: 4970 VARSITY DRIVE
City/State/Zip: LISLE, IL 60532-4101
Telephone: 630.795.7368

Document Control No: WP1-026-2003
Lab. Reference No. or Episode No.:

Project Number: 28020-4.07
Site Name: PEOPLES GAS - WILLOW PARCEL 1

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix			Number of Containers	Parameter/Method Code: Comp. Strength Test (5 hrs)	Comp. Strength Test (6 hrs)	Comp. Strength Test (8 hrs)	Comp. Strength Test (12 hrs)	Comp. Strength Test (16 hrs)	Comp. Strength Test (28 days)	Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	~~Gas~~ Other								
WP1	CS5		—	—	—	—	2/4/03	0853			X	2	X						
WP1	CS6		—	—	—	—		0854			X	2		X					
WP1	CS8		—	—	—	—		0856			X	2			X				
WP1	CS12		—	—	—	—		0851			X	2				X			
WP1	CS16		—	—	—	—		0859			X	2					X		
WP1	CS28		—	—	—	—	↓	0901			X	3						X	

Sampler (signature): Case Berg

Relinquished By (signature): 1. Case Berg — Date/Time 2/4/03 1000

Relinquished By (signature): 2. — Date/Time

Sampler (signature):

Received By (signature): — Date/Time 2/4/03 1000

Received By (signature): — Date/Time

Custody Seal Number: —

Special Instructions: Compressive Strength Testing @ 5, 6, 8, 12, 16 hrs and 28 days

Ice Present in Container: Yes ☐ No ☐

Temperature Upon Receipt:

Laboratory Comments:

PATRICK
ENGINEERING INC.

4970 Varsity Drive
Lisle, IL 60532-4101
Tel: (630) 795-7200
Fax: (630) 724-1681

April 24, 2003

Andreas D. Jazdanian, Ph.D.
Burns & McDonnell Engineering Company
2601 West 22nd Street
Oak Brook, Illinois 60523-1229

Subject: Letter of Transmittal for Unconfined Compressive Strength Testing of Consolidated Flowable Fill Samples from WPI CS28 Cells 1 through 5

Reference: Patrick Engineering Project No. C1000.BM

Dear Mr. Jazdanian:

Enclosed are unconfined compressive strength test results and chain-of-custody for consolidated flowable fill samples from Peoples Gas – Willow Parcel I. The enclosed results are for samples from CS28 Cells 1 through 5.

Patrick appreciates the opportunity to provide testing services to you, and we look forward to working with Burns & McDonnell Engineering Company again in the near future. If you have questions regarding the enclosed testing results, please call 630 795-7200.

Sincerely,

PATRICK ENGINEERING INC.

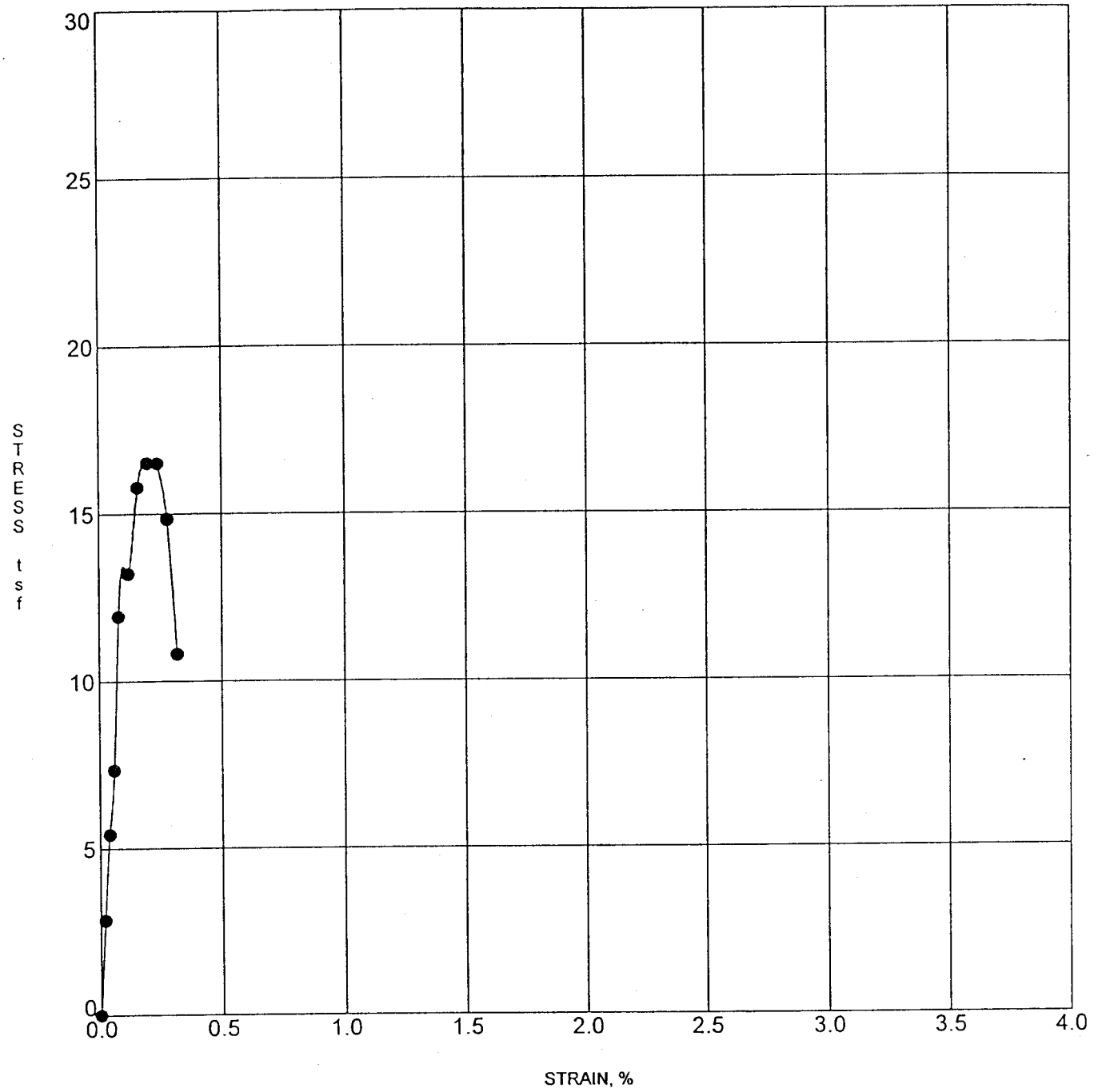
M. Dean Jones, Jr., P.E.
Project Manager

Mike Gentile
Laboratory Technician

mdj/erg

Enclosures: Unconfined Compressive Strength Test Results

P:\Lisle\BURNS_&_MC\C1000-BM\Trans Ltr 042303.doc



ASTM 2166 WPI CS28 1.1 Strength= 15.70084 @ 0.15074925 % Strain

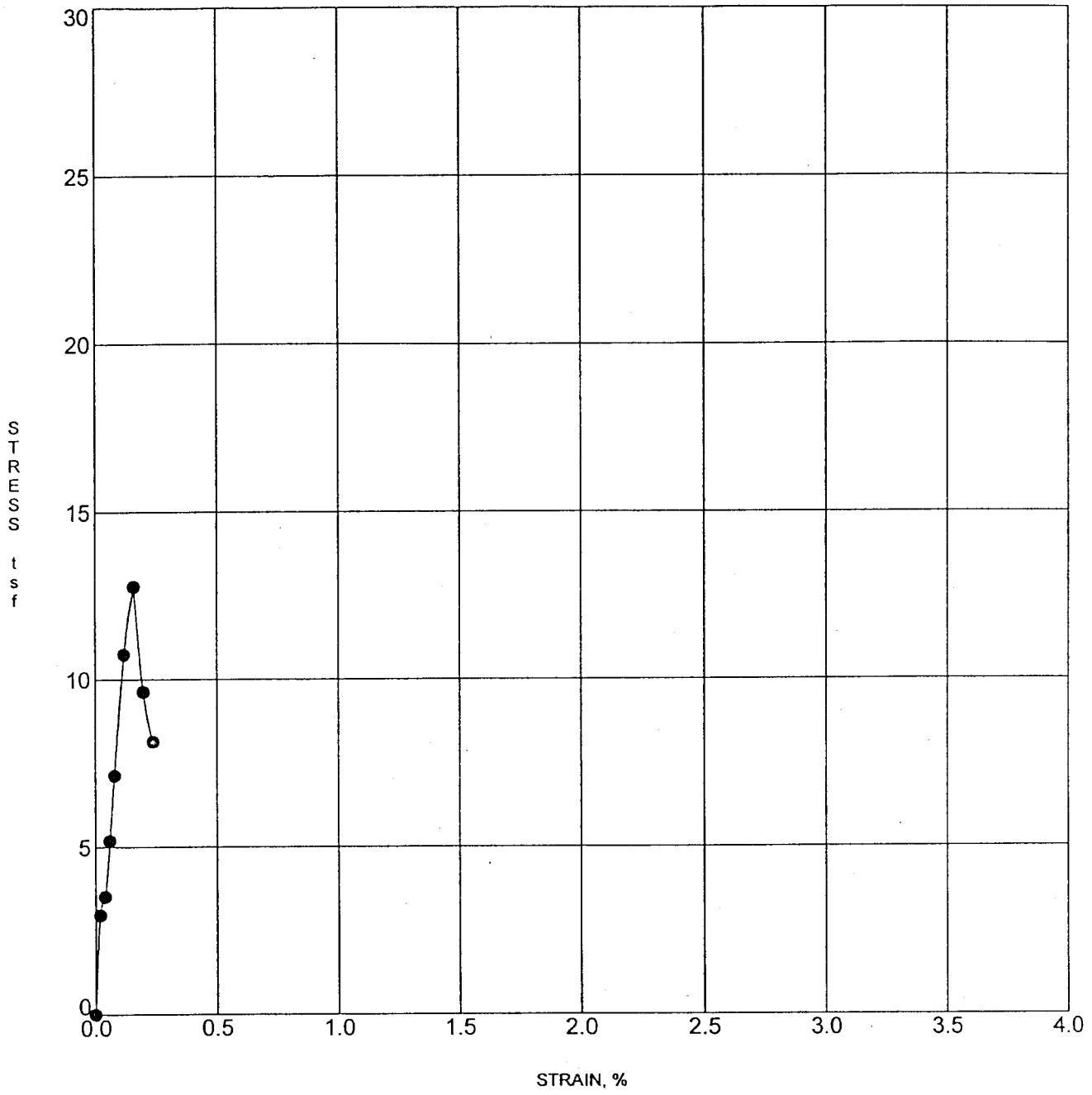
Specimen Identification	Classification	D.Den.	MC%
● WPI CS28 1.1	Consolidated Flowable Fill Cell 1	115.2	5.7

PROJECT Burns & McDonnell- Peoples Willow - JOB NO. C1000BM
DATE 04/24/03

UNCONFINED COMPRESSION TEST

Patrick Engineering, Inc.

Testing Analyst: MB Results Checked By: MJ 4/24/03



ASTM 2166 WPI CS28 1.2 Strength= 12.27769 @ 0.1404244 % Strain

Specimen Identification	Classification	D.Den.	MC%
● **WPI CS28 1.2**	**Consolidated Flowable Fill Cell 1**	**115.7**	**5.7**

PROJECT **Burns & McDonnell- Peoples Willow -** JOB NO. **C1000BM**
DATE **04/24/03**

UNCONFINED COMPRESSION TEST

Patrick Engineering, Inc.

Testing Analyst: MC Results Checked By: MC 4/24/03

Burns & McDonnell SINCE 1898

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Engineering
2601 W. 22nd St
Oak Brook, Illinois 60523
Phone: (630) 990-0300 Fax: (630) 990-0301

Attention: JOAN GONZALEZ

Laboratory: PATRICK ENGINEERING
Address: 4970 VARSITY DRIVE
City/State/Zip: LISLE, IL 60532-4101
Telephone: 630.795.7368

Document Control No: WPI-026-2003
Lab. Reference No. or Episode No.:

Project Number: 28020-4.07
Site Name: PEOPLES GAS - WILLOW PARCEL 1

Sample Number: Group or SWMU Name	Sample Number: Sample Point	Sample Number: Sample Designator	Sample Event: Round	Sample Event: Year	Sample Depth (in feet): From	Sample Depth (in feet): To	Sample Collected: Date	Sample Collected: Time	Sample Type: Matrix: Liquid	Solid	Gas	Other	Number of Containers	Parameter/Method Code: Comp. Strength Test (5 hrs)	Comp. Strength Test (6 hrs)	Comp. Strength Test (8 hrs)	Comp. Strength Test (12 hrs)	Comp. Strength Test (16 hrs)	Comp. Strength Test (28 days)	Remarks
WPI	CS5		—	—	—	—	2/4/03	0853			X		2	X						
WPI	CS6		—	—	—	—	↓	0854			X		2		X					
WPI	CS8		—	—	—	—		0856			X		2			X				
WPI	CS12		—	—	—	—		0851			X		2				X			
WPI	CS16		—	—	—	—		0859			X		2					X		
WPI	CS28		—	—	—	—		0901			X		3						X	

OB

Sampler (signature): Case Berg

Relinquished By (signature): 1. Case Berg — Date/Time 2/4/03 1000

Relinquished By (signature): 2. — Date/Time

Sampler (signature):

Received By (signature):

Date/Time 2/4/03 1000

Received By (signature):

Date/Time

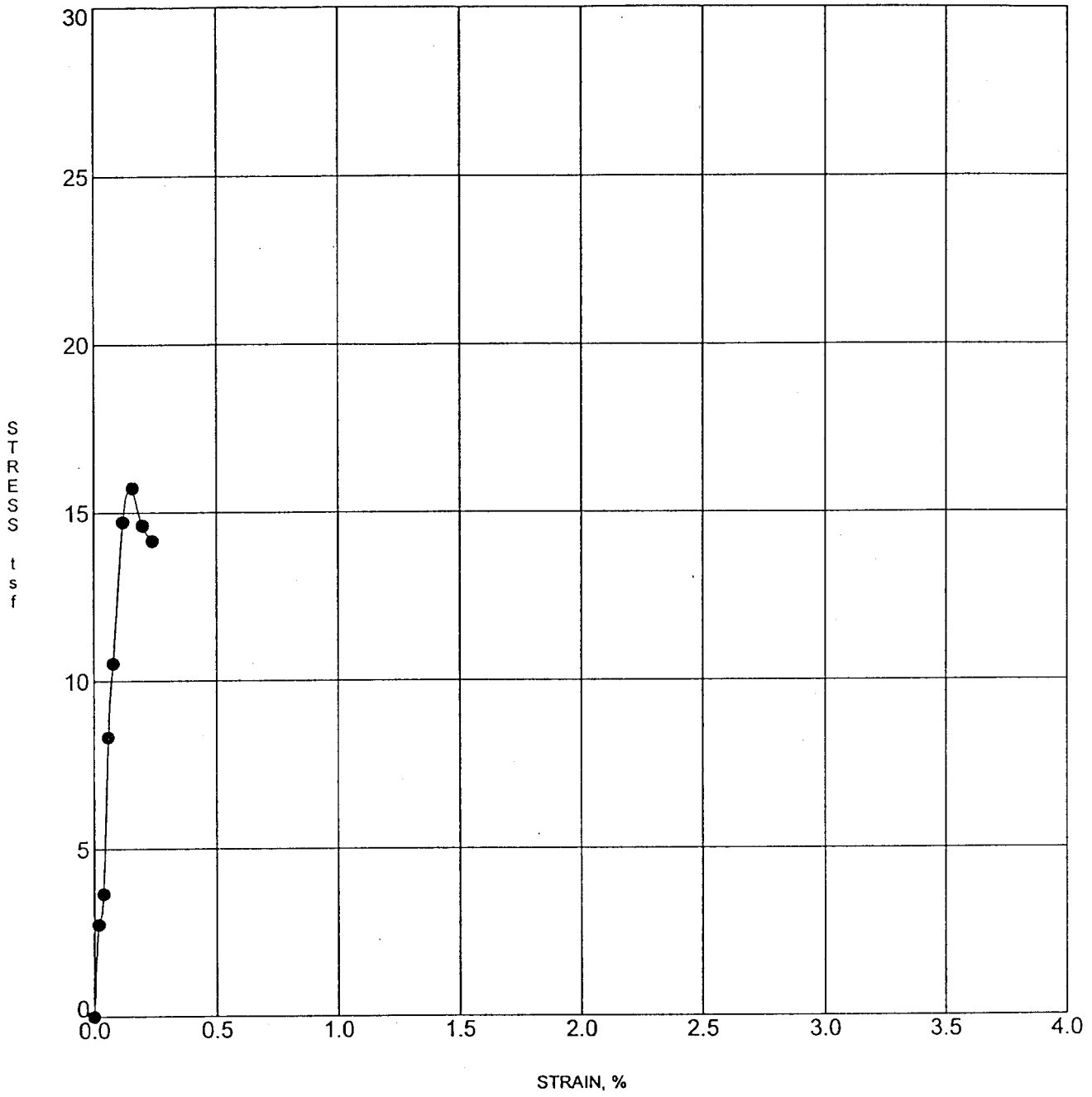
Custody Seal Number: —

Special Instructions: Compressive Strength Testing @ 5, 6, 8, 12, 16 hrs and 28 days

Ice Present in Container: Yes ☐ No ☐

Temperature Upon Receipt:

Laboratory Comments:



ASTM 2166 WPI CS28 2.1 Strength= 15.11064 @ 0.14016869 % Strain

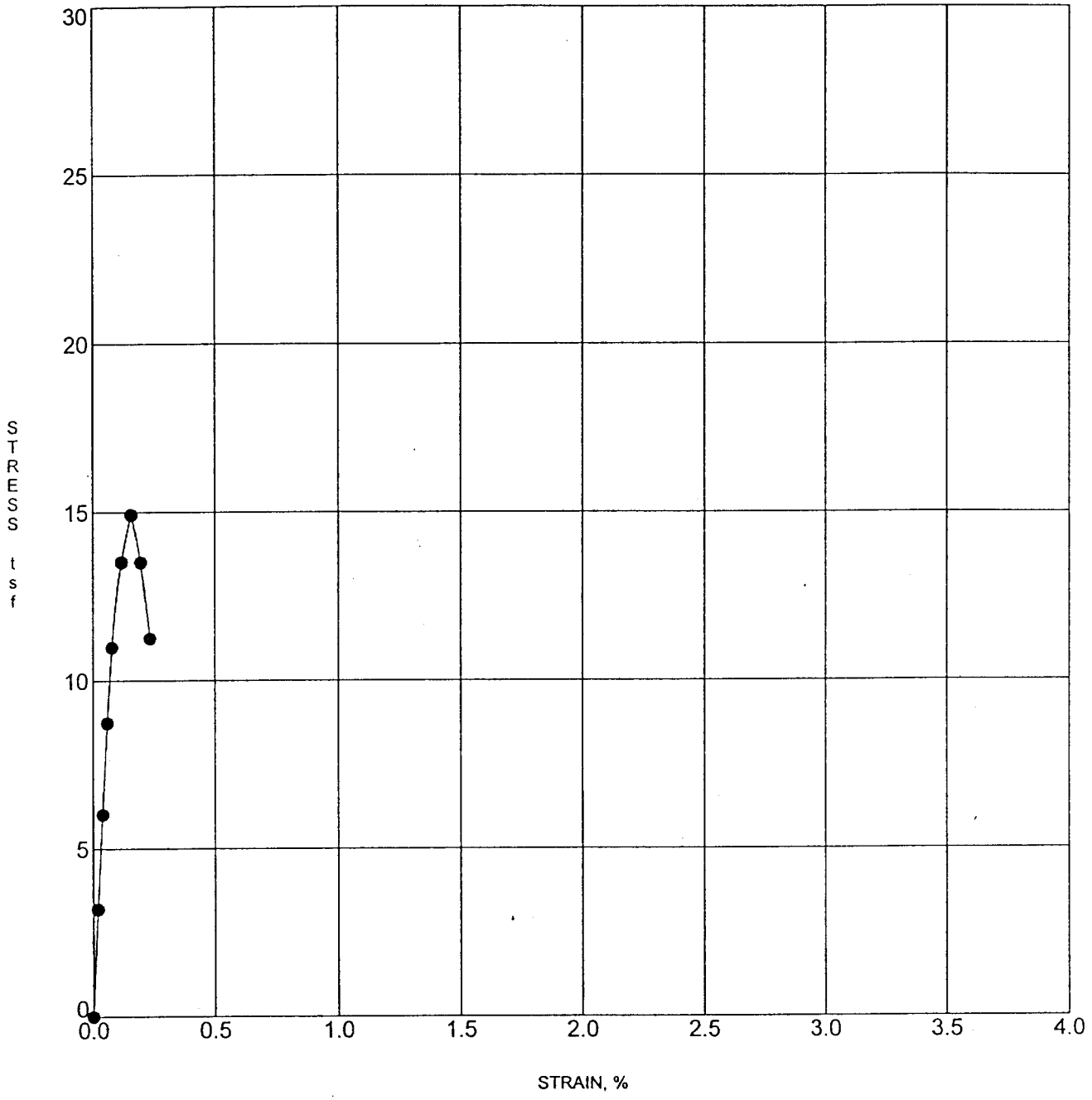
	Specimen Identification	Classification	D.Den.	MC%
●	**WPI CS28 2.1**	**Consolidated Flowable Fill Cell 2**	**116.0**	**5.2**

PROJECT **Burns & McDonnell- Peoples Willow -** JOB NO. **C1000BM**
DATE **04/24/03**

UNCONFINED COMPRESSION TEST

Patrick Engineering, Inc.

Testing Analyst [illegible] Results Checked By [illegible] 4/24/03



ASTM 2166 WPI CS28 2.2 Strength= 14.34738 @ 0.1400789 % Strain

Specimen Identification	Classification	D.Den.	MC%
● WPI CS28 2.2	**Consolidated Flowable Fill Cell 2**	**116.5**	**5.5**

PROJECT **Burns & McDonnell- Peoples Willow -** JOB NO. **C1000BM**
DATE **04/24/03**

UNCONFINED COMPRESSION TEST

Patrick Engineering, Inc.

Testing Analyst: LLO Results Checked By: MJ 4/24/03

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Engineering
2601 W. 22nd St
Oak Brook, Illinois 60523
Phone: (630) 990-0300 Fax: (630) 990-0301
Attention: Joan Gonzalez

Laboratory: Patrick Engineering
Address: 4970 Varsity Drive
City/State/Zip: Lisle, IL 60532-4101
Telephone: 630-795-7368

Document Control No: WPI-038-2003
Lab. Reference No. or Episode No.:

Project Number: 28020-4.07
Site Name: Peoples Gas - Willow Parcel 1

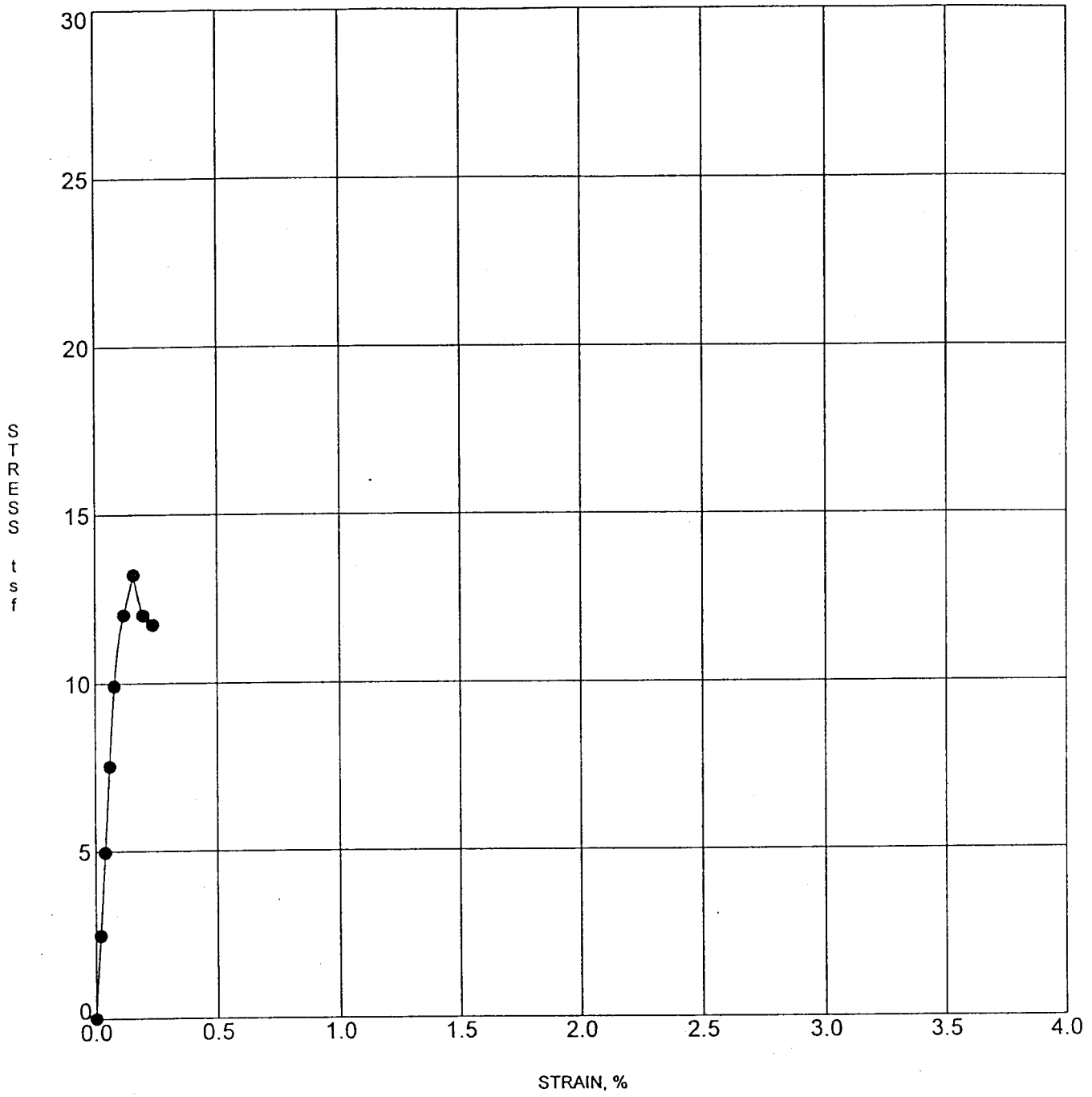
Sample Number: Group or SWMU Name	Sample Number: Sample Point	Sample Number: Sample Designator	Sample Event: Round	Sample Event: Year	Sample Depth (in feet): From	Sample Depth (in feet): To	Sample Collected: Date	Sample Collected: Time	Sample Type: Matrix: Liquid	Solid	Gas	Number of Containers	Parameter/Method Code	Remarks
WPI	CS28-Coil2		—	—	7.5'	8.5'	2-11-03	1000			X	3	X	EP

Compressor Strength (28 days) curing time.

Remarks: Any Questions Call- Myself Eric Pless @ 630-699-9858 or Andy J. @ 630-990-0300 Ext. 477

Special Instructions: After (2-11-03) Compressor Strength (28 days) curing time.

Sampler (signature): Eric Pless	Sampler (signature):	Custody Seal Number: —		
Relinquished By (signature): 1. Eric Pless	Date/Time: 2/17/03 1800	Received By (signature):	Date/Time	Ice Present in Container: Yes ☐ No ☐
Relinquished By (signature): 2. Sylvia Kratten	Date/Time: 2/18/03 1200	Received By (signature):	Date/Time: 2/18/03 1200	Temperature Upon Receipt:
				Laboratory Comments:



ASTM 2166

WPI CS28 3.1 Strength= 12.70416 @ 0.1401581 % Strain

Specimen Identification	Classification	D.Den.	MC%
● WPI CS28 3.1	Consolidated Flowable Fill Cell 3	114.3	5.0

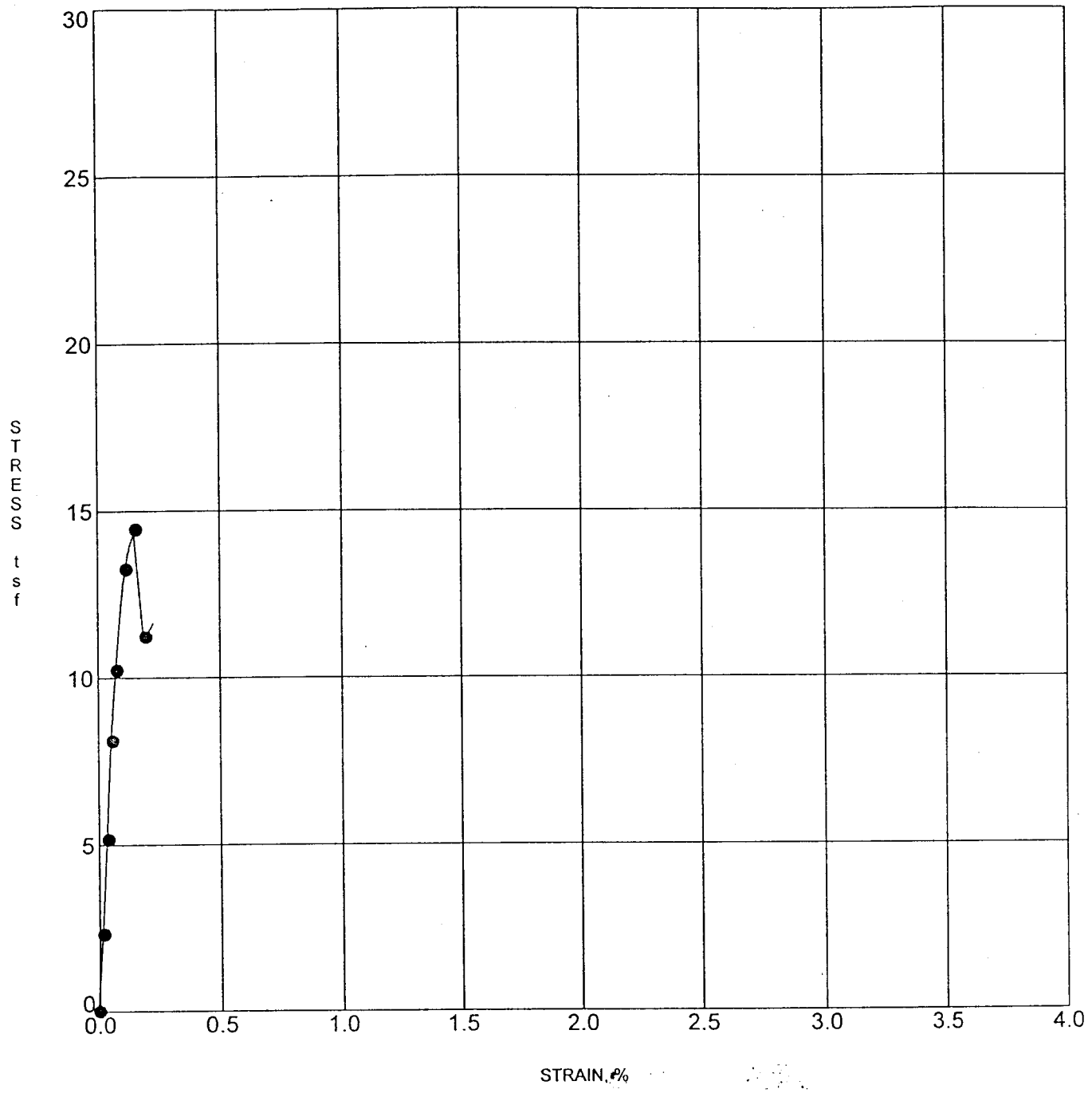
PROJECT Burns & McDonnell- Peoples Willow - JOB NO. C1000BM

DATE 04/24/03

UNCONFINED COMPRESSION TEST

Patrick Engineering, Inc.

Testing Analyst MG Results Checked By MG 4/24/03



ASTM 2166 WPI CS28 3.2 Strength= 13.88723 @ 0.14017928 % Strain

Specimen Identification	Classification	D.Den.	MC%
● WPI CS28 3.2	Consolidated Flowable Fill Cell 3	113.9	5.1

PROJECT Burns & McDonnell- Peoples Willow - JOB NO. C1000BM
DATE 04/24/03

UNCONFINED COMPRESSION TEST

Patrick Engineering, Inc.

Testing Analyst: MC Results Checked By: MJ 4/24/03

Burns & McDonnell SINCE 1898

Request for Chemical Analysis and Chain of Custody Record

0.51 Exp

Document Control No: WP1-~~0003~~ - 2003

Lab. Reference No. or Episode No.:

Burns & McDonnell Engineering
2601 W. 22nd St
Oak Brook, Illinois 60523
Phone: (630) 990-0300 Fax: (630) 990-0301

Attention: Joan Gonzalez

Laboratory: Patrick Engineering
Address: 4970 Varsity Drive
City/State/Zip: Lisle, IL 60532-4101
Telephone: 630-745-7368

Project Number: 28020-4.07

Site Name: Peoples Gas-Willow Parcel 1

Sample Type / Matrix

Sample Number: Group or SWMU Name	Sample Number: Sample Point	Sample Number: Sample Designator	Sample Event: Round	Sample Event: Year	Sample Depth (in feet): From	Sample Depth (in feet): To	Sample Collected: Date	Sample Collected: Time	Matrix: Liquid	Matrix: Solid	Matrix: Gas	Number of Containers	Parameter/Method Code: After 28 Days Compressive Strength	Remarks
WP1	CS28-cell3		-	-	8'	9'	2-25-03	0700				3	X	EP

Any Questions call myself Eric Pipuss @ 630 990-0302 cell # 6306994858 of Andy JC 630-990-0300 Ext. 477

Sampler (signature): Eric Pipuss

Sampler (signature):

Custody Seal Number: —

Special Instructions: Do compressive strength test after 28 days curing time.

Relinquished By (signature): 1. Eric Pipuss — Date/Time: 2/28/03 1700 — Received By (signature): [signature] 3/12/03 — Date/Time:

Relinquished By (signature): 2. [signature] — Date/Time: — Received By (signature): — Date/Time:

Ice Present in Container: Yes ☐ No ☐

Temperature Upon Receipt:

Laboratory Comments:

881201 Form WSB KC1 CH

UNCONFINED COMPRESSIVE STRENGTH
(AASHTO T 208)

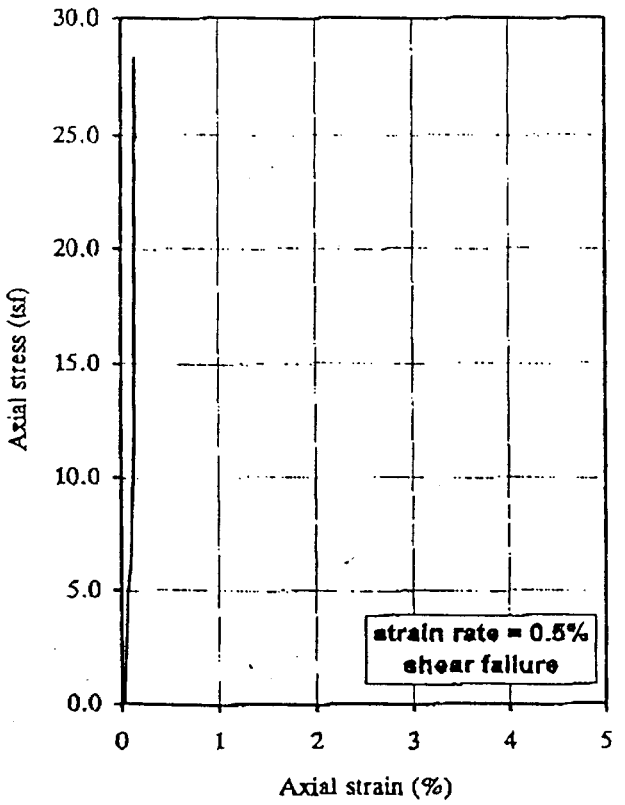
Analyst name: *Koshy Jacob*
Test date: *8-Apr-03*
Sample description: *Consolidated flowable fill*

Cell 4.1

Sample: BMD-0700-B

Initial height h_0 =	*6.00*	in	Initial water content w =	7.17%	
Initial diameter d_0 =	*3.00*	in	Initial unit weight g =	112.21	pcf
Mass of wet sample and tare M_t =	*1522.20*	g	Initial dry unit weight g_d =	104.70	pcf
Mass of dry sample and tare M_d =	*1432.80*	g	Initial void ratio e_0 =	NA	
Mass of tare M_t =	*186.40*	g	Initial degree of saturation S_r =	NA	
Mass of sample Ms=	*1246.40*	g	Young's modulus E =	13901.07	tsf
Estimated specific gravity G_s =	*NA*		Unconfined compressive strength q_u =	28.34	tsf

Displacement (in) Δh	Force (lbs) F	Strain (%) e	Stress (tsf) s
0.00	*0.00*	0.00	0.00
0.00	*11.25*	0.03	0.11
0.00	*487.50*	0.07	4.97
0.01	*600.00*	0.10	6.11
0.01	*750.00*	0.11	7.64
0.01	*1012.50*	0.13	10.32
0.01	*1162.50*	0.13	11.84
0.01	*1500.00*	0.14	15.28
0.01	*2782.50*	0.14	28.34
0.01	*2437.50*	0.15	24.83



Prepared by: _____ Date: 4/11/03

Checked by: Koshy T. Fanj Date: 4/11/03

UNCONFINED COMPRESSIVE STRENGTH
(AASHTO T 208)

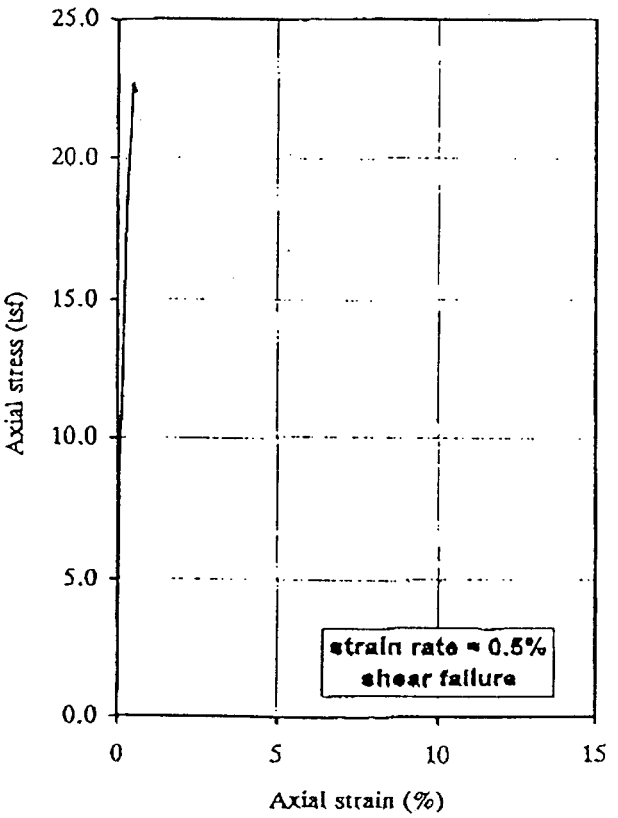
Cell 4.2

Analyst name: *Koshy Jacob*
Test date: *8-Apr-03*
Sample description: *Consolidated flowable fill*

Sample: BMD-0700-B

Initial height h_0 =	*5.99*	in	Initial water content w =	7.53%	
Initial diameter d_0 =	*3.01*	in	Initial unit weight g =	110.50	pcf
Mass of wet sample and tare M_t =	*1513.00*	g	Initial dry unit weight g_d =	102.76	pcf
Mass of dry sample and tare M_d =	*1420.20*	g	Initial void ratio e_0 =	NA	
Mass of tare M_t =	*187.50*	g	Initial degree of saturation S_r =	NA	
Mass of sample Ms=	*1232.70*	g	Young's modulus E =	3677.16	tsf
Estimated specific gravity G_s =	*NA*		Unconfined compressive strength q_u =	22.70	tsf

Displacement (in) Δh	Force (lbs) F	Strain (%) e	Stress (tsf) s
0.00	*0.00*	0.00	0.00
0.01	*900.00*	0.08	9.12
0.01	*1125.00*	0.17	11.39
0.02	*1650.00*	0.25	16.69
0.02	*1920.00*	0.33	19.40
0.03	*2062.50*	0.42	20.82
0.03	*2250.00*	0.48	22.70
0.04	*2212.50*	0.58	22.30



Prepared by: _____ Date: 4/11/03

Checked by: _____ Date: 4/11/03

Burns & McDonnell SINCE 1898

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Engineering
2601 W. 22nd St
Oak Brook, Illinois 60523
Phone: (630) 990-0300 Fax: (630) 990-0301
Attention: JOAN GONZALEZ

Laboratory: PATRICK ENGINEERING
Address: 4970 VARSITY DRIVE
City/State/Zip: LISLE, IL 60532-4101
Telephone: 630-795-7368

Document Control No: WI-059-2003
Lab. Reference No. or Episode No.:

Project Number: 28020-4.07
Site Name: PEOPLES GAS - WILLOW PARCEL 1

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix			Number of Containers	Parameter/Method Code: COMP. STRENGTH (28 DAY)	Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	OTHER Gas D.S			
WPI-CS28-CELL 4			—	—	3.5	4.5	3/11/03	0700			X	3	X	

ANY QUESTIONS CALL - ERIC PREUSS @ 630-699-9858 OR ANDY J. @ 630-990-0300 EXT. 477

Sampler (signature):

Sampler (signature):

Custody Seal Number: —

Special Instructions: COMPRESSIVE STRENGTH AFTER 28 DAYS OF CURING TIME.

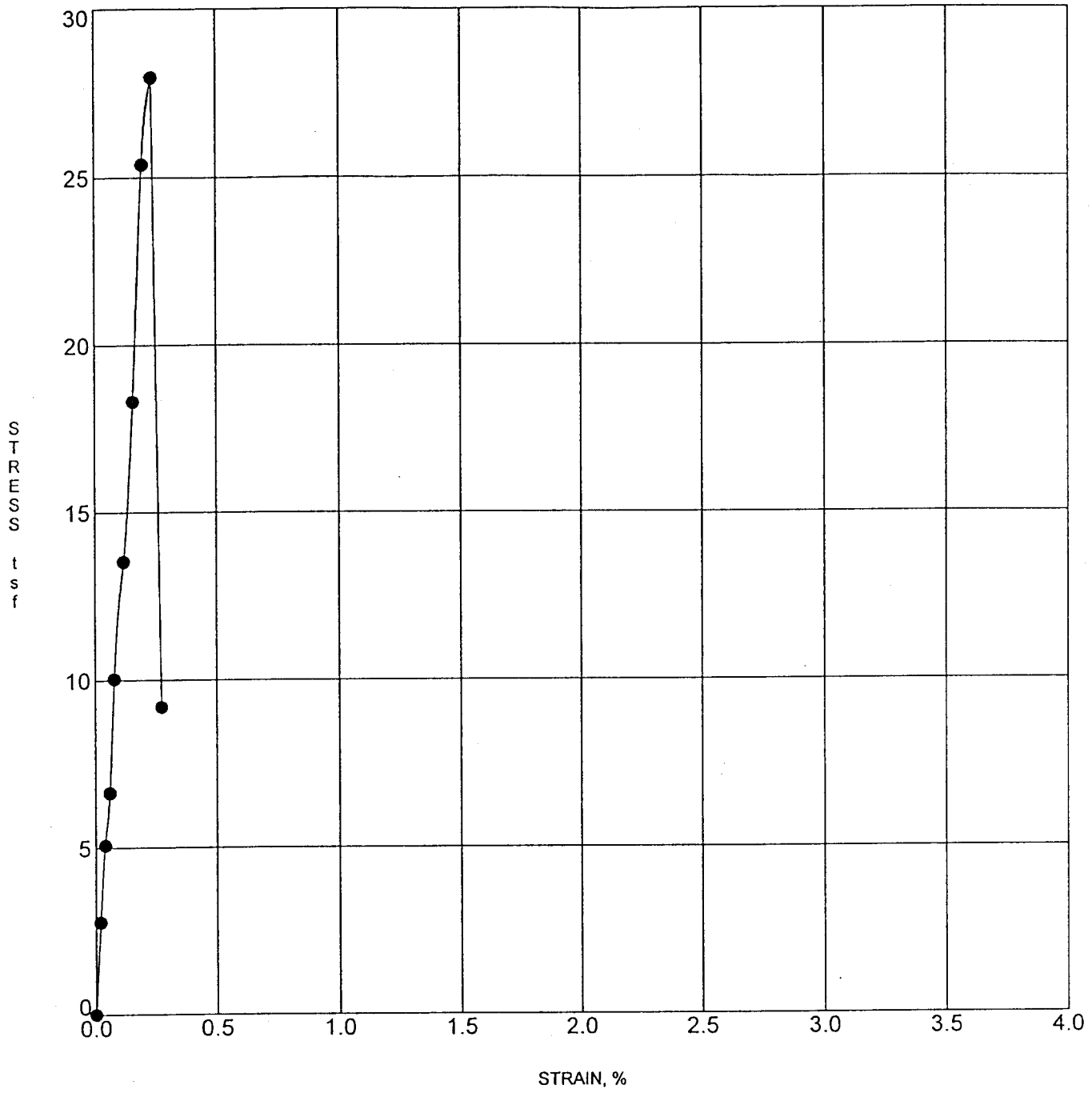
Relinquished By (signature): 1.
Date/Time: 3/11/03 0900
Received By (signature):
Date/Time: 3/11/03

Relinquished By (signature): 2.
Date/Time:
Received By (signature):
Date/Time:

Ice Present in Container: Yes ☐ No ☐

Temperature Upon Receipt:

Laboratory Comments:



ASTM 2166 WPI CS28 5.1 Strength= 26.35047 @ 0.15943451 % Strain

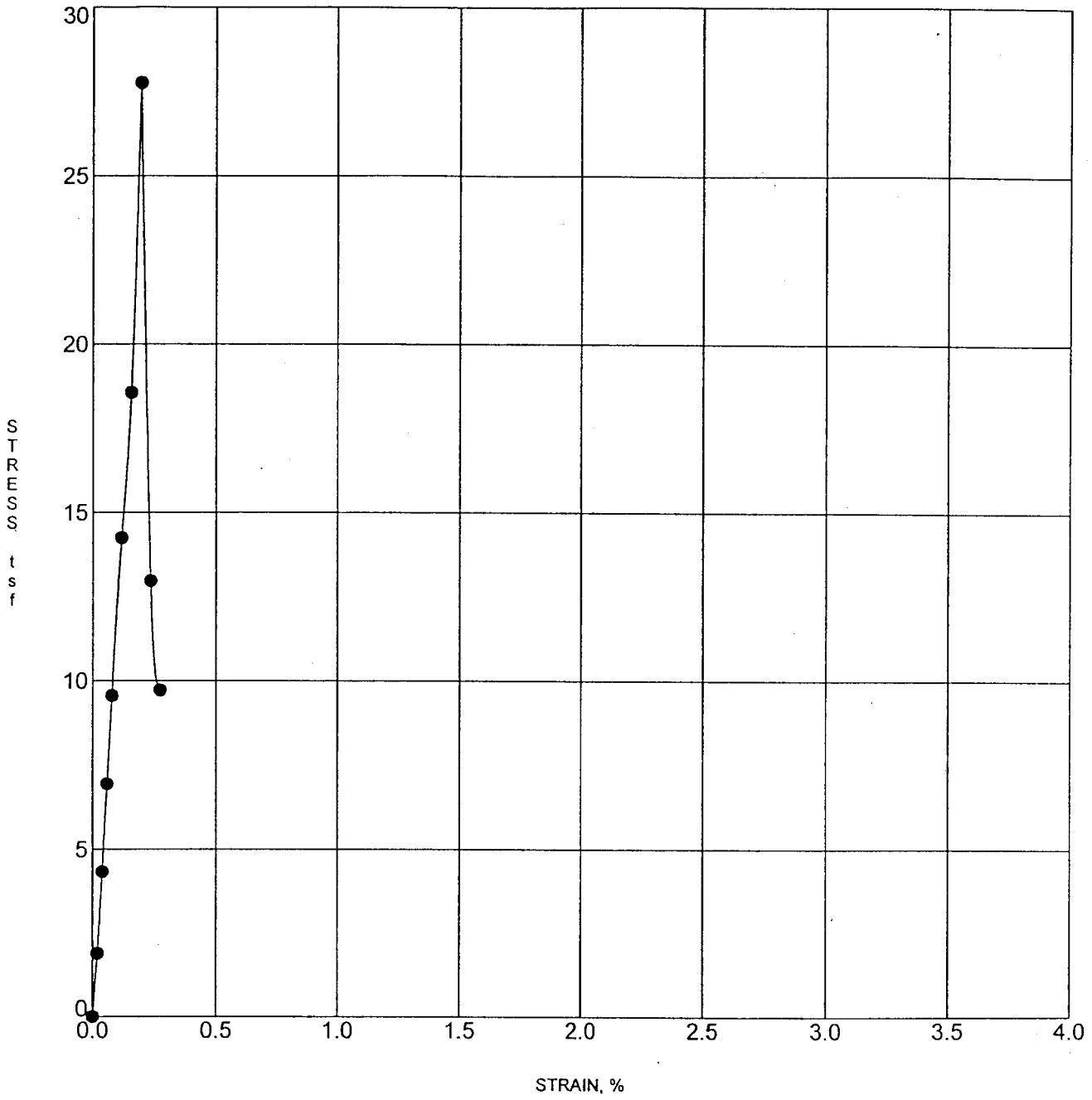
Specimen Identification	Classification	D.Den.	MC%
● WPI CS28 5.1	Consolidated Flowable Fill Cell 5	115.1	5.4

PROJECT Burns & McDonnell- Peoples Willow - JOB NO. C1000BM
DATE 04/24/03

UNCONFINED COMPRESSION TEST

Patrick Engineering, Inc.

Testing Analyst: [illegible] Results Checked By: [illegible] 4/24/03



ASTM 2166

WPI CS28 5.2 Strength= 26.41699 @ 0.14960938 % Strain

Specimen Identification	Classification	D.Den.	MC%
● WPI CS28 5.2	Consolidated Flowable Fill Cell 5	111.8	5.3

PROJECT Burns & McDonnell- Peoples Willow - JOB NO. C1000BM

DATE 04/24/03

UNCONFINED COMPRESSION TEST

Patrick Engineering, Inc.

Testing Analyst: MC Results Checked By: MJ 4/24/03

Burns & McDonnell SINCE 1898

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Engineering
2601 W. 22nd St
Oak Brook, Illinois 60523
Phone: (630) 990-0300 Fax: (630) 990-0301

Attention: Joan Gonzalez

Laboratory: Patrick Engineering
Address: 4970 Varsity Drive
City/State/Zip: Lisle, IL 60532-4101
Telephone: 630-795-7369

Document Control No: WPI-067 -2003
Lab. Reference No. or Episode No.:

Project Number: 28020-4.07
Site Name: Peoples Gas - Willow Parcel 1

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix			Number of Containers	Parameter/Method Code: Comp Strength (28 days) After 28 Days Curing Time. EP	Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	other Gas			
WPI-CS28	-Cell 5				6'	5'	3-19-03	0700			X	3	X	EP

Any Questions
Call
Andy - J.
630-990-0300
Ext 477
or E. Preuss
630-694-4858

Sampler (signature): Eric Preuss	Sampler (signature):	Custody Seal Number	Special Instructions: Do Compressive Strength After 28 Days of Curing Time
Relinquished By (signature) 1. Eric Preuss	Date/Time 3-20-03 1600	Received By (signature):	Date/Time 3/21/03 800
Relinquished By (signature) 2.	Date/Time	Received By (signature):	Date/Time

Ice Present in Container: Yes ☐ No ☐

Temperature Upon Receipt:

Laboratory Comments:

PATRICK
ENGINEERING INC.

4970 Varsity Drive
Lisle, IL 60532-4101
Tel: (630) 795-7200
Fax: (630) 724-1681

April 25, 2003

Andreas D. Jazdanian, Ph.D.
Burns & McDonnell Engineering Company
2601 West 22nd Street
Oak Brook, Illinois 60523-1229

Subject: Letter of Transmittal for Unconfined Compressive Strength Testing of Consolidated Flowable Fill from WPI CS28 Cell 6

Reference: Patrick Engineering Project No. C1000.BM

Dear Mr. Jazdanian:

Enclosed is the unconfined compressive strength test result and chain-of-custody for consolidated flowable fill samples from Peoples Gas – Willow Parcel I. The enclosed result is from CS28 Cell 6. Two cylinders cast from Cell 6 were damaged and not tested.

During testing, it was determined that the unconfined strength of test cylinders exceeded the limits of Patrick's load ring. We subsequently outsourced testing of the cylinders to Wang Engineering and again the cylinder strength exceeded the load ring capacity. Back in our lab, we attempted to measure the unconfined strength using a concrete compression machine. However the compression rate accelerated as load was applied, which resulted in failure of Cylinder 6.1 before useful data could be obtained. Finally, a newly calibrated, higher capacity load ring was obtained and Cylinder 6.2 was successful tested.

Cylinder 6.3 was improperly cast with an irregularly shaped end. An attempt was made to level the irregular end of cylinder, but during shaping, the cylinder failed.

Patrick appreciates the opportunity to provide testing services to you, and we look forward to working with Burns & McDonnell Engineering Company again in the near future. If you have questions regarding the enclosed testing results, please call 630 795-7200.

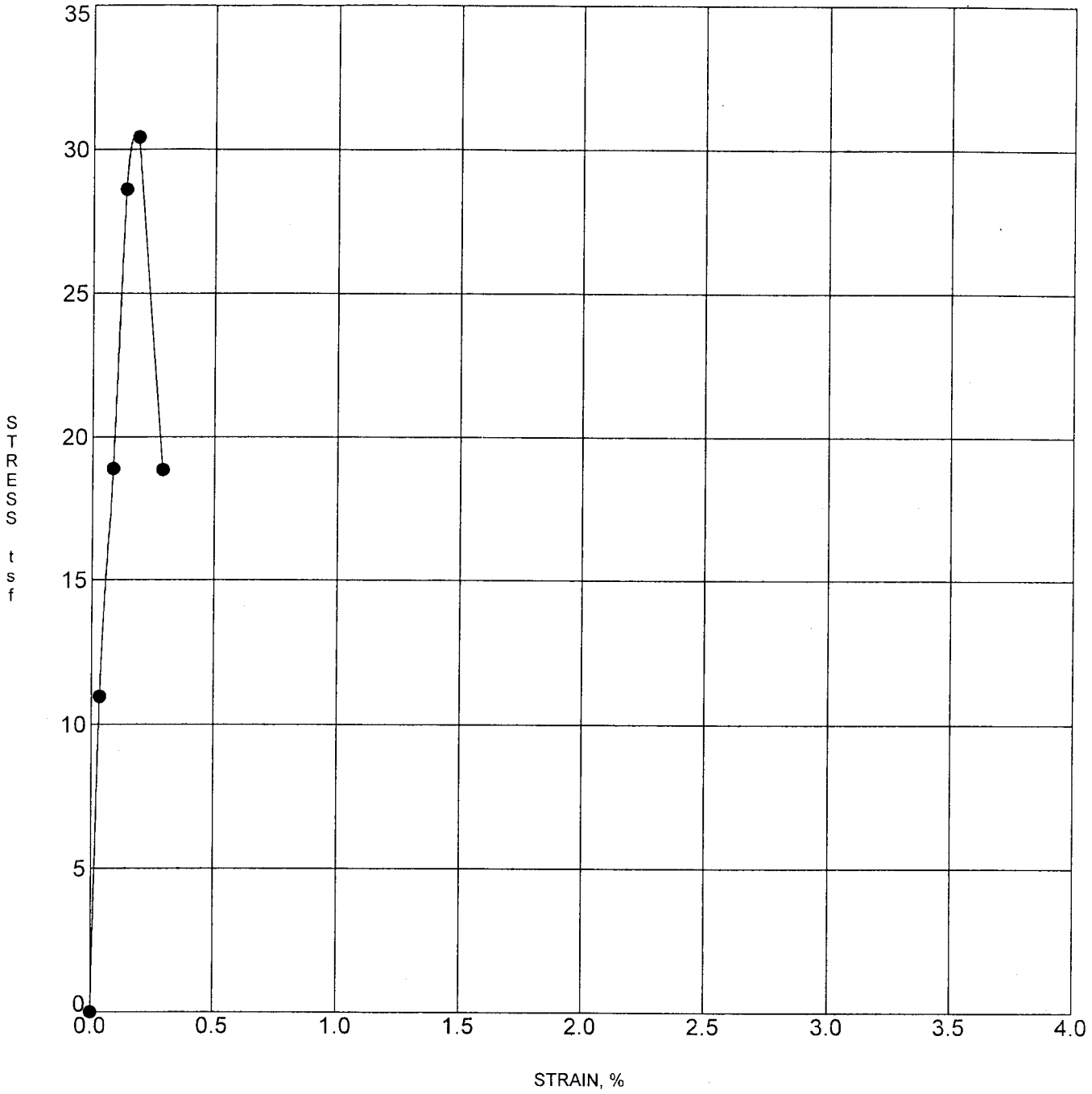
Sincerely,

PATRICK ENGINEERING INC.

Mike Gentile
Laboratory Technician

mg/erg

Enclosures: Unconfined Compressive Strength Test Result



WPI CS28 6.2 Unconfined Compressive Strength = 30.42089 @ .1865154 % Strain

Specimen Identification	Classification	D.Den.	MC%
● WPI CS28 6.2	Consolidated Flowable Fill Cell 6	106.5	8.3

PROJECT Burns & McDonnell- Peoples Willow - JOB NO. C1000BM
DATE 04/25/03

UNCONFINED COMPRESSION TEST (ASTM D2166)

Patrick Engineering, Inc.

Testing Analyst: [illegible] Results Checked By: MJT 4/25/03

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell
SINCE 1898

Burns & McDonnell Engineering
2601 W. 22nd St
Oak Brook, Illinois 60523
Phone: (630) 990-0300 Fax: (630) 990-0301
Attention: Joan Gonzalez

Laboratory: Patrick Engineering
Address: 4970 Varsity Drive
City/State/Zip: Lisle, IL 60532-4101
Telephone: 630-745-7369

Document Control No: WPI-073-2003
Lab. Reference No. or Episode No.:

Project Number: 28070-4.07
Site Name: Peoples Gas - Willow Pond 1

Sample Type: Matrix

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Matrix			Number of Containers	Parameter/Method Code (Comp Strength (28 days) After 28 Days of Curing Time)	Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Other / Gas			
WPI-CS28 - Cell 6					7'	8'	3-26-03	0700			X	3	X	

Any Questions
Call Andy J.
630-990-0300
Ext. 477
or Eric P.
630-694-8858

EP

Sampler (signature): Eric Peterson
Sampler (signature):
Custody Seal Number
Special Instructions: Do Compressive Strength After 28 Days of Curing Time

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
1. Eric Peterson	3-26-03 1000		
2. Chad Kelly	4/2/03 1000	Michael Gentile	4/2/03

Ice Present in Container: Yes ☐ No ☐
Temperature Upon Receipt:
Laboratory Comments:

HYDRAULIC CONDUCTIVITY RESULTS

PATRICK
ENGINEERING INC.

4970 Varsity Drive
Lisle, IL 60532-4101
Tel: (630) 795-7200
Fax: (630) 724-1681

May 2, 2003

Andreas D. Jazdanian, Ph.D.
Burns & McDonnell Engineering Company
2601 W. 22nd Street
Oakbrook, Illinois 60523

Re: Peoples Gas – Willow Parcel I – Hydraulic Conductivity of Flowable Fill Samples from CS28 Cell 2

Patrick Engineering Project No. C1000.BM

Dear Mr. Jazdanian;

Responding to your request, Patrick Engineering Inc. is providing results of hydraulic conductivity testing for Samples CS28 Cell 2 'A' and 'B'. The tests were performed according to ASTM D5084 on flowable fill samples cast on February 11, 2003. Both samples were prepared for testing according to the ASTM procedure.

Sample CS28 Cell 2 'A' cured for 2 days and testing started on February 13, 2003. After two weeks of attempted saturation, no flow was observed. B-bar values after the two weeks of saturation were below the 0.95 value required by the test method. Lack of flow and saturation is an indication that the flowable fill has very low permeability. As per the direction of Burns & McDonnell backpressure saturation was stopped on February 27, 2003.

Sample CS28 Cell 2 'B' cured for 28 days with testing starting on March 11, 2003. Again, similar to Sample 'A', efforts to saturate the sample failed after two weeks. Similar to the results for Sample 'A', the permeability of Sample 'B' is very low.

If you have questions concerning the above information, please contact either of the undersigned at 630 795-7200.

Sincerely,

PATRICK ENGINEERING INC.

Dean Jones, Jr., P.E.
Project Manager

Michael F. Gentile
Laboratory Technician

mdj

P:\Lisle\BURNS_&_MC\C1000-BM\hyd cond ltr - 050203.doc

APPENDIX D
IMPORTED BACKFILL MATERIAL LETTERS AND TROXLER â CERTIFICATION
REMEDIAL ACTION COMPLETION REPORT
A PORTION OF WILLOW STREET STATION

Material Service Corporation
A GENERAL DYNAMICS COMPANY

Memorandum

To: Eric Pruess
From: Jeff Stewart
cc:
Date: January 21, 2003
Re: CA-6 Limestone

File No.:

Attachments:

The CA-6 Limestone you requested would come out of our McCook facility located at 47th. And Plainfield Road (Yard 19). The material is a clean virgin material. If I can be of any further help do not hesitate to call me at (815) 354-3000

Modified Procter
132 to 138 pounds per cubic feet
5% to 6% moister

Standard Procter
125 to 131 pounds per cubic feet
5% to 6% moister

Thank You

Jeff Stewart
Sales Representative

222 N. LaSalle Street
Chicago, IL 60601-1090
Tel 312-443-6735
Fax 312-443-7096
dpeden@material-service.com

Vulcan
Materials Company

Chad Ragsdale
Asst. Superintendent/ Quality Control Supervisor
Midwest Division

5500 Joliet Rd.
McCook, IL 60525
Telephone 708 987-4760
Fax 708 387-4755
Mobile 630 918-9836
E-mail: ragsdalc@vmcmail.com

March 19, 2003

To: Burns & McDonnell
Attn: Diane Saftic
Re: 1701 N. Kingsbury Jobsite

This is to certify that the CA-6 aggregate shipped from the McCook quarry 50312-378 is from approved stock that was (1) IDOT-tested and/or covered under the IDOT process control program, or (2) tested under the IDOT Aggregate Gradation Control System. This aggregate is from virgin dolomitic limestone.

Sincerely,

Chad Ragsdale
Quality Control Supervisor

Certificate of Completion

This certifies that

Eric Preuss

has successfully completed the

Nuclear Gauge Safety Training Class

conducted by the training department of

Troxler Electronic Laboratories, Inc.

Greg Farnen
Instructor

8/29/02
Date

William F. Troxler, Jr.
President

TROXLER
Troxler Electronic Laboratories, Inc.
PO Box 12057 • 3008 Cornwallis Rd. • Research Triangle Park, NC 27709
Phone: (919) 549-8661 • Fax: (919) 549-0761 • Web site: www.troxlerlabs.com

Enrollment ID: **828**

HAZMAT Certification

as required by 49 CFR 172, Subpart H

Recertification required 3 years from training date

This certifies that

Eric Preuss

has been trained and tested in accordance with the U.S. Department of Transporation hazardous material requirements for general awareness/familiarization, function-specific, and safety training as related to the transportation of nuclear gauges. A description of the training course materials is available from Troxler.

8/29/02	**8/29/05**	**Greg Farnen**
Training Date	*Expiration Date*	*Instructor*

Troxler Electronic Laboratories, Inc.
PO Box 12057 • 3008 Cornwallis Rd. • Research Triangle Park, NC 27709
Phone: (919) 549-8661 • Fax: (919) 549-0761 • www.troxlerlabs.com

Certified by

Company Official: _____

Company Name: _____

Company Address: _____

_____

_____

Enrollment ID: **828**

APPENDIX E
PCB WIPE ANALYTICAL RESULTS
REMEDIAL ACTION COMPLETION REPORT
A PORTION OF WILLOW STREET STATION

STAT Analysis Corporation
2201 West Campbell Park Drive Chicago, IL 60612-3547 312.733.0551 Fax:312.733.2386
e-mail address: STATinfo@STATAnalysis.com AIHA accredited 10248, NVLAP accredited 101202-0

January 23, 2003

Alison Millerick
Peoples Energy Corporation
130 E. Randolph Drive
20th Floor
Chicago, IL 60601
Telephone: (312) 240-4832
Fax: (312) 240-4765

RE: 28020-4.07, Willow Parcel 1 STAT Project No: 0301079

Dear Alison Millerick:

STAT Analysis received 1 sample for the referenced project on 1/22/2003. The analytical results are presented in the following report.

All analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except where noted in the Case Narrative.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,

Craig Chawla
Project Manager

STAT Analysis Corporation

Date: January 23, 2003

Client: Peoples Energy Corporation
Project: 28020-4.07, Willow Parcel 1
Lab Order: 0301079

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
0301079-001A	WP1-PCB-24 PIPE-012203		1/22/2003 1:45:00 PM	1/22/2003

STAT Analysis Corporation
2201 West Campbell Park Drive Chicago, IL 60612-3547
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATanalysis.com

NVLAP

AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

Date Reported: January 23, 2003

Date Printed: January 23, 2003

Client:	Peoples Energy Corporation	**Client Sample ID:**	WP1-PCB-24 PIPE-012203
Lab Order:	0301079	**Collection Date:**	1/22/2003 1:45:00 PM
Project:	28020-4.07, Willow Parcel 1	**Matrix:**	Wipe
Lab ID:	0301079-001		

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PCBs (Wipe)	**SW8082**			Prep Date: **1/22/2003**		Analyst: **JF**
Aroclor 1016	ND	1		µg/wipe	1	1/23/2003
Aroclor 1221	ND	1		µg/wipe	1	1/23/2003
Aroclor 1232	ND	1		µg/wipe	1	1/23/2003
Aroclor 1242	ND	1		µg/wipe	1	1/23/2003
Aroclor 1248	ND	1		µg/wipe	1	1/23/2003
Aroclor 1254	ND	1		µg/wipe	1	1/23/2003
Aroclor 1260	ND	1		µg/wipe	1	1/23/2003

Qualifiers:

ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

Burns & McDonnell SINCE 1898

Request for Chemical Analysis and Chain of Custody Record 0301079

Burns & McDonnell Engineering
2601 W. 22nd St
Oak Brook, Illinois 60523
Phone: (630) 990-0300 Fax: (630) 990-0301
Attention: ALISON MILLERICK / JOAN GONZALEZ

Laboratory: STAT
Address: 2201 WEST CAMPBELL PARK DR.
City/State/Zip: CHICAGO, IL 60612-3547
Telephone: 312-733-0551

Document Control No: WP1-015-2003
Lab. Reference No. or Episode No.:

Project Number: 28020-4.07
Site Name: PEOPLES GAS - WILLOW PARCEL 1

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix			Number of Containers	Parameter/Method Code: PCBs							Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Gas								001	
WP1-PCB-	24PIPE-	012203	—	—	SURFACE		1/22/03	1345		X		1	X							~~2 DAY TAT~~ 1/23/03 DUS 24 HOUR TAT

Sampler (signature):

Sampler (signature):

Custody Seal Number

Special Instructions: BILL PEOPLES ENERGY AND SEND ORIGINAL ~~ANALYSIS~~ ANALYTICAL REPORT TO THEM. SEND COPY OF REPORT TO BURNS+MCD.

Relinquished By (signature): 1.

Date/Time: 1/22/03 1400

Received By (signature):

Date/Time: 1-23-03 3:31

Ice Present in Container: Yes ☐ No ☐

Temperature Upon Receipt:

Relinquished By (signature): 2.

Date/Time: 1-23-03 4:00

Received By (signature):

Date/Time

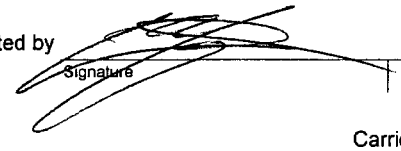
Laboratory Comments:

STAT Analysis Corporation

Sample Receipt Checklist

Client Name PEOPLES | Date and Time Received: 01/22/2003

Work Order Numbe 0301079 | Received by SG

Checklist completed by  Signature 1/22/03 Date | Reviewed by Initials 1/22/03 Date

Matrix | Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☐	No ☑	Temperature Ambient °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☒	Yes ☒	No ☒
Water - Samples properly preserved/ pH checked?	Yes ☐	No ☑	

Adjusted? _____ Checked by _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

STAT Analysis Corporation
2201 West Campbell Park Drive Chicago, IL 60612-3547 312.733.0551 Fax:312.733.2386
e-mail address: STATinfo@STATAnalysis.com AIHA accredited 10248, NVLAP accredited 101202-0

March 03, 2003

Joan Gonzalez
Burns & McDonnell
2601 W. 22nd Street
OakBrook, IL 60523-1229
Telephone: (630) 990-0300
Fax: (630) 990-0301

RE: 28020-4.07, Willow Parcel 1-Peoples STAT Project No: 0302205

Dear Joan Gonzalez:

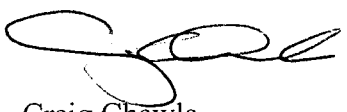
STAT Analysis received 1 sample for the referenced project on 2/25/2003. The analytical results are presented in the following report.

All analyses were performed in accordance with methods as referenced on the analytical report. Those analytical results expressed on a dry weight basis are also noted on the analytical report.

All analyses were performed within established holding time criteria, and all Quality Control criteria met EPA or laboratory specifications except where noted in the Case Narrative.

Thank you for the opportunity to serve you and I look forward to working with you in the future. If you have any questions regarding the enclosed materials, please contact me at (312) 733-0551.

Sincerely,



Craig Chawla
Project Manager

STAT Analysis Corporation

Date: March 03, 2003

Client: Burns & McDonnell
Project: 28020-4.07, Willow Parcel 1-Peoples
Lab Order: 0302205

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
0302205-001A	WP1-PCB-36		2/25/2003 8:00:00 AM	2/25/2003

STAT Analysis Corporation
2201 West Campbell Park Drive Chicago, IL 60612-3547
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATanalysis.com

NVLAP

AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

Date Reported: March 03, 2003
Date Printed: March 03, 2003

Client: Burns & McDonnell
Lab Order: 0302205
Project: 28020-4.07, Willow Parcel 1-Peoples
Lab ID: 0302205-001

Client Sample ID: WP1-PCB-36
Collection Date: 2/25/2003 8:00:00 AM
Matrix: Wipe

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
PCBs (Wipe)	**SW8082**			Prep Date: **2/28/2003**		Analyst: **JF**
Aroclor 1016	ND	2		µg/wipe	1	3/2/2003
Aroclor 1221	ND	2		µg/wipe	1	3/2/2003
Aroclor 1232	ND	2		µg/wipe	1	3/2/2003
Aroclor 1242	ND	2		µg/wipe	1	3/2/2003
Aroclor 1248	ND	2		µg/wipe	1	3/2/2003
Aroclor 1254	ND	2		µg/wipe	1	3/2/2003
Aroclor 1260	ND	2		µg/wipe	1	3/2/2003

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quanititation limits
B - Analyte detected in the associated Method Blank
* - Value exceeds Maximum Contaminant Level
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
E - Value above quantitation range

STAT Analysis Corporation

Date: 03-Mar-03

CLIENT: Burns & McDonnell
Work Order: 0302205
Project: 28020-4.07, Willow Parcel 1-Peoples
Test No: SW8082 **Matrix:**

QC SUMMARY REPORT
SURROGATE RECOVERIES

Sample ID	CL10BZ2	XYL2456CLM						
MB-5486-PCB	126	116						
LCS-5486-PCB	134	122						
LCSD-5486-WIPE	132	122						
0302205-001A	74.0	70.0						

Acronym		Surrogate	QC Limits
CL10BZ2	=	Decachlorobiphenyl	30-150
XYL2456CLM	=	Tetrachloro-m-xylene	30-150

*** Surrogate recovery outside acceptance limits**

STAT Analysis Corporation

Date: *March 03, 2003*

CLIENT: Burns & McDonnell
Work Order: 0302205
Project: 28020-4.07, Willow Parcel 1-Peoples

ANALYTICAL QC SUMMARY REPORT

BatchID: 5486

Sample ID: **MB-5486-PCB** SampType: **MBLK** TestCode: **PCB_WIPE** Units: **µg/wipe** Prep Date: **2/28/2003** Run ID: **GC-ECD_030302A**
Client ID: **ZZZZZ** Batch ID: **5486** TestNo: **SW8082** Analysis Date: **3/2/2003** SeqNo: **128818**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	2.0									
Aroclor 1221	ND	2.0									
Aroclor 1232	ND	2.0									
Aroclor 1242	ND	2.0									
Aroclor 1248	ND	2.0									
Aroclor 1254	ND	2.0									
Aroclor 1260	ND	2.0									

Sample ID: **LCS-5486-PCB** SampType: **LCS** TestCode: **PCB_WIPE** Units: **µg/wipe** Prep Date: **2/28/2003** Run ID: **GC-ECD_030302A**
Client ID: **ZZZZZ** Batch ID: **5486** TestNo: **SW8082** Analysis Date: **3/2/2003** SeqNo: **128819**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	11.24	2.0	10	0	112	30	150	0	0		
Aroclor 1260	11.47	2.0	10	0	115	30	150	0	0		

Sample ID: **LCSD-5486-WIPE** SampType: **LCSD** TestCode: **PCB_WIPE** Units: **µg/wipe** Prep Date: **2/28/2003** Run ID: **GC-ECD_030302A**
Client ID: **ZZZZZ** Batch ID: **5486** TestNo: **SW8082** Analysis Date: **3/2/2003** SeqNo: **128820**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	11.49	2.0	10	0	115	30	150	0	0		
Aroclor 1260	11.45	2.0	10	0	114	30	150	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

STAT Analysis Corporation

Sample Receipt Checklist

Client Name B&M

Date and Time Received: 02/25/2003

Work Order Numbe 0302205

Received by CDF

Checklist completed by _____ Signature 2/25/03 Date

Reviewed by _____ Initials 2/26/03 Date

Matrix

Carrier name STAT Analysis

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shippping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☐	No ☑	
All samples received within holding time?	Yes ☑	No ☐	
Container or Temp Blank temperature in compliance?	Yes ☑	No ☐	Temperature On Ice °C
Water - VOA vials have zero headspace?	No VOA vials submitted ☒	Yes ☒	No ☒
Water - Samples properly preserved/ pH checked?	Yes ☐	No ☑	

Adjusted? _____ Checked by _____

Any No and/or NA (not applicable) response must be detailed in the comments section below.

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding _____

Comments: _____

Corrective Action _____

Burns & McDonnell SINCE 1898

Request for Chemical Analysis and Chain of Custody Record

Burns & McDonnell Engineering
2601 W. 22nd St
Oak Brook, Illinois 60523
Phone: (630) 990-0300 Fax: (630) 990-0301
Attention: ALLISON MILLERICK/ JOAN GONZALEZ

Laboratory: STAT
Address: 2201 West Campbell Park Drive
City/State/Zip: Chicago, IL
Telephone: 312-733-0551

Document Control No: WP1-046-2003
Lab. Reference No. or Episode No.: 0302205

Project Number: 28020-4.07
Site Name: WILLOW PARCEL 1 - PEOPLES

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix			Number of Containers	Parameter/Method Code: PCBs	Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Gas			
WP1-	PCB-2HT36	PIPE-022503	—	—	—	—	2/25/03	0800		X		1	X	5 Day T.A.T (001)

CB

Sampler (signature): Case Berg

Sampler (signature):

Custody Seal Number: 022503STAT-001

Special Instructions: Bill Peoples Energy and send original analytical results to them. Send copy to Burns & McDonnell.

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
1. Case Berg	2/25/03 1000	Sal Gomez	10:10 2-25-03
2. Sal Gomez	10:30 2-25-03		2/25/03 10:45

Ice Present in Container: Yes ☒ No ☐

Temperature Upon Receipt: On Ice

Laboratory Comments:

APPENDIX F
ASBESTOS ANALYTICAL RESULTS
REMEDIAL ACTION COMPLETION REPORT
A PORTION OF WILLOW STREET STATION

STAT Analysis Corporation
2201 West Campbell Park Drive Chicago, IL 60612-3547
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
NVLAP Accreditation # 101202-0 ; AIHA Accreditation # 101160

NVLAP & AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

ASBESTOS ANALYSIS BY POLARIZED LIGHT MICROSCOPY

Method: EPA-600/M4-82-020

Burns & McDonnell
2601 West 22nd Street
Oak Brook, IL 60523
Phone: 630-990-0300
Fax: 630-990-0301

Client Reference: 28020-4.07
Location: Peoples Gas Willow Parcel 1
STAT Batch No.: 238301
STAT Client No.: 1121

Date Received: 02/24/2003
Date Analyzed: 02/24/2003
Date Reported: 02/24/2003
Turn Around Time: 48 Hour

Laboratory Sample	Client Sample Number	Asbestos Components (%)	Non-Asbestos Components (%)
238301001	WP1-1A-001	ND	Cellulose 15-20% Binder 80-85%
238301002	WP1-2A-001	ND	Cellulose 15-20% Binder 80-85%
238301003	WP1-3A-001	ND	Cellulose 15-20% Binder 80-85%

ND = Asbestos Not Detected. NA = Not Analyzed

The use of the NVLAP logo does not imply endorsement by NVLAP or any agency of the US Government.

Analyzed by Name : _____ Date: 02/24/2003

STAT Analysis Corporation:
2201 West Campbell Park Drive, Chicago, Illinois 60612-3547
Tel: 312.733.0551; Fax: 312.733.2386; e-mail address: STATinfo@STATAnalysis.com

NVLAP

AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

PLM ASBESTOS CHAIN OF CUSTODY

Page: ____ of ____

TURN-AROUND TIME (Hours): 4 ☐ 4-8 ☐ 12 ☐ 24 ☐ 48 ☐ 72 ☐

Date Due: ____ **Time Due:** ____

Client: Burns + McDonnell
Street: ____
City, State, Zip: ____
Phone: ____
Fax: ____

Project Name: ____
Project Number: ____
Project Location: ____
Project Manager: ____

Office Use Only:
COC No.: 238301
STAT Client No.:
Samples Acceptable: Yes ☐ No ☐
Comments:

Analyzed By: ____ Date/Time: 2/24/05
Data File: ____ QC By: ____

CHAIN OF CUSTODY RECORD

Relinquished By: ____ Date/Time: ____ Received By: ____ Date/Time: ____
Relinquished By: ____ Date/Time: ____ Received By: ____ Date/Time: ____

Client Sample Number	Date Taken	Time Taken	Percent Type of Asbestos	Percent Non-Asbestos Components	Laboratory Sample Number
WP1-1A-001			ND	80-85 cella 5-20	
2A-001			ND	↓	
3A-001			ND		

Comments: ____

Client Contact Information:
Attention: ____
Phone Number: ____
Pager: ____
Fax (1): ____
Fax (2): ____

Office Use Only:

Yes	No	Signed/Date/Time
		FAX HC 2/25/05 940AM

Burns & McDonnell SINCE 1898

Request for Chemical Analysis and Chain of Custody Record

238301

Burns & McDonnell Engineering
2601 W. 22nd St
Oak Brook, Illinois 60523
Phone: (630) 990-0300 Fax: (630) 990-0301
Attention: Joan Gonzalez

Laboratory: Stat Analysis
Address:
City/State/Zip: Chicago, IL
Telephone:

Document Control No: WP1-043-2003
Lab. Reference No. or Episode No.:

Project Number: 28020-4.07
Site Name: Peoples Gas - Willow Parcel 1

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix			Number of Containers	Parameter/Method Code: PLM	Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Gas			
WP1	-1A	-001	—	—	—	—	2/23/03	2:20P		X		1	X	black canvas material w/ lt. tar coating < 5ft
WP1	-2A	-001	—	—	—	—	↓	↓		X		1	X	
WP1	-3A	-001	—	—	—	—	↓	↓		X		1	X	

Sampler (signature): Dana Davis

Sampler (signature):

Custody Seal Number: —

Special Instructions: Analyze to the 1st positive
48 HR Turnaround

Relinquished By (signature): 1. Carie Berg
Date/Time: 2/24/03 1100
Received By (signature): Sal Soman
Date/Time: 2-24-03 11:00

Relinquished By (signature): 2. Sal Soman
Date/Time: 2-24-03 1:30
Received By (signature): M. Flores
Date/Time: 2/24 4:35

Ice Present in Container: Yes ☐ No ☐

Temperature Upon Receipt:

Laboratory Comments:

STAT Analysis Corporation
2201 West Campbell Park Drive Chicago, IL 60612-3547
Tel: (312) 733-0551 Fax: (312) 733-2386 STATinfo@STATAnalysis.com
NVLAP Accreditation # 101202-0 ; AIHA Accreditation # 101160

NVLAP & AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

ASBESTOS ANALYSIS BY POLARIZED LIGHT MICROSCOPY

Method: EPA-600/M4-82-020

Burns & McDonnell
2601 West 22nd Street
Oak Brook, IL 60523
Phone: 630-990-0300
Fax: 630-990-0301

Client Reference: 28020-4.07
Location:
STAT Batch No.: 239357
STAT Client No.: 1121

Date Received: 04/03/2003
Date Analyzed: 04/07/2003
Date Reported: 04/07/2003
Turn Around Time: 48 Hour

Laboratory Sample	Client Sample Number	Asbestos Components (%)	Non-Asbestos Components (%)
239357001	4A	ND	Binder 95-99% Other 1-5%
239357002	4B	ND	Binder 95-99% Other 1-5%
239357003	4C	ND	Binder 95-99% Other 1-5%
239357004	5A	ND	Binder 90-95% Glass 5-10%
239357005	5B	ND	Cellulose 1-5% Binder 90-95% Glass 1-5%
239357006	5C	ND	Cellulose 1-5% Binder 90-95% Glass 1-5%

ND = Asbestos Not Detected. NA = Not Analyzed

The use of the NVLAP logo does not imply endorsement by NVLAP or any agency of the US Government.

Analyzed by Name : _____ Date: 04/07/2003

STAT Analysis Corporation:
2201 West Campbell Park Drive, Chicago, Illinois 60612-3547
Tel: 312.733.0551; Fax: 312.733.2386; e-mail address: STATinfo@STATAnalysis.com

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AIHA Environmental Lead and Industrial Hygiene ACCREDITED LABORATORY

PLM ASBESTOS Analysis Record

Page:___of___

COC No.: 239357

Analyzed By: _____ Date/Time: _____

QC By: _____

Client Sample Number	Percent Type of Asbestos	Percent Non-Asbestos Components	Laboratory Sample Number
4A	ND	B95-95 Q 1-5	
4B	ND	B95-95 Q 1-5	
4C	ND	B95-95 Q 1-5	
5A	ND	B90-95 G 5-10	
5B	ND	B90-95 G 1-5 Cell 1-5	
5C	ND	B90-95 G 1-5 Cell 1-5	

Comements:

Burns & McDonnell SINCE 1898

Request for Chemical Analysis and Chain of Custody Record

239357

Burns & McDonnell Engineering
2601 W. 22nd St
Oak Brook, Illinois 60523
Phone: (630) 990-0300 Fax: (630) 990-0301

Attention: JOAN GONZALEZ

Laboratory: STAT ANALYSIS
Address: 2201 WEST CAMPBELL PARK DRIVE
City/State/Zip: CHICAGO, IL
Telephone: 312-733-0551

Document Control No: WP1-083-2003
Lab. Reference No. or Episode No.:

Project Number: 28020-4.07
Site Name: PEOPLES GAS - WILLOW PARCEL 1

Sample Number			Sample Event		Sample Depth (in feet)		Sample Collected		Sample Type: Matrix			Number of Containers	Parameter/Method Code: PLM	Remarks
Group or SWMU Name	Sample Point	Sample Designator	Round	Year	From	To	Date	Time	Liquid	Solid	Gas			
WP1	- 4A	- 001	—	2003	—	—	4/3/03	12:15P		X		1	X	~50ft long pipe thin Black Tar Coat // 40% in tact
WP1	- 4B	- 001	—	↓	—	—	↓	↓		X		1	X	
WP1	- 4C	- 001	—		—	—				X		1	X	
WP1	- 5A	- 001	—		—	—				X		1	X	~25 SF on end Cap // Black Canvas w/ black tar coating
WP1	- 5B	- 001	—		—	—				X		1	X	
WP1	- 5C	- 001	—		—	—				X		1	X	

Sampler (signature): Dana Dunn
Sampler (signature):
Custody Seal Number
Special Instructions: 48HR TAT Analyze to the 1st positive for each group

Relinquished By (signature)	Date/Time	Received By (signature)	Date/Time
1. Eric Dunn	4-3-03 1300	Joel Gonzalez	4-3-03 1300
2. Joel Gonzalez	4-3-03 1:30	[illegible]	4/3/03 1:30

Ice Present in Container: Yes ☐ No ☐
Temperature Upon Receipt:
Laboratory Comments:

APPENDIX G
SUMMARY OF DISPOSAL QUANTITIES
REMEDIAL ACTION COMPLETION REPORT
A PORTION OF WILLOW STREET STATION

Table G-1
Special Waste Disposal Quantities
Remedial Action
A Portion of Willow Street Station

Date	Manifest Number	Volume (tons)	Daily Total (Tons)	Running Total (Tons)
PHASE I				
1/24/2003	10499201	32.09		
	10499202	35.40	67.49	**67.49**
2/6/2003	10499203	88.88	88.88	**156.37**
2/20/2003	10499204	92.54	92.54	**248.91**
3/3/2003	10499205	93.23	93.23	**342.14**
3/13/2003	10499206	111.56	111.56	**453.70**
3/14/2003	10499207	18.21	18.21	**471.91**
3/21/2003	10499208	60.81		
	10499209	42.72	103.53	**575.44**
4/1/2003	10499210	86.28		
	10499211	68.94	155.22	**730.66**
4/2/2003	10499212	59.04		
	10499213	60.77		
VOID	10499214	0.00		
	10499215	38.71	158.52	**889.18**
4/3/2003	10499216	60.03		
	10499217	64.36		
	10499218	40.38		
	10499219	19.99	184.76	**1073.94**
PHASE II				
7/16/2003	10499220	69.50		
	10499221	68.60	138.10	**1212.04**
7/17/2003	10499222	62.20		
	10499223	63.60		
	10499224	65.70	191.50	**1403.54**
7/18/2003	10499225	62.45		
	10499226	69.81	132.26	**1535.80**
7/21/2003	10499227	70.76		
	10499228	72.18		
	10499229	72.34	215.28	**1751.08**

Table G-2
Source Material Disposal Quantities
Remedial Action
A Portion of Willow Street Station

Date	Manifest Number	Volume (tons)	Daily Total (Tons)	Running Total (Tons)
PHASE I				
1/20/2003	10499231	62.83		
	10499232	57.74	120.57	**120.57**
1/21/2003	10499233	43.33		
	10499234	34.32	77.65	**198.22**
2/7/2003	10499235	82.97		
	10499236	36.26		
	10499237	16.90	136.13	**334.35**
2/21/2003	10499238	40.47		
	10499239	21.57	62.04	**396.39**
2/24/2003	10499240	44.93	44.93	**441.32**
3/4/2003	10499241	41.95		
	10499242	43.71	85.66	**526.98**
3/5/2003	10499243	45.51	45.51	**572.49**
3/14/2003	10499244	42.62		
	10499245	43.66	86.28	**658.77**
3/24/2003	10499246	83.38		
	10499247	46.33	129.71	**788.48**
4/1/2003	10499248	22.04	22.04	**810.52**

Note: No source material was disposed offsite during Phase II activities.

Table G-3
Water Disposal Quantities
Remedial Action
A Portion of Willow Street Station

Date	Manifest Number	Volume (Gallons)	Daily Total (Gallons)	Running Total (Gallons)
PHASE I				
1/20/2003	10443569	1300	1300	**1300**
1/21/2003	10443582	1050		
	10443583	2300	3350	**4650**
2/21/2003	10507189	1500	1500	**6150**
2/24/2003	10443585	1800	1800	**7950**
3/4/2003	10507101	2900	2900	**10850**
3/5/2003	10443577	1500	1500	**12350**
3/14/2003	10507116	5050		
	10507117	450	5500	**17850**
3/17/2003	10507104	1600	1600	**19450**
3/24/2003	10507113	2700	2700	**22150**
3/25/2003	10507112	1300	1300	**23450**
4/3/2003	10507114	1300	1300	**24750**
PHASE II				
7/22/2003	10507100	3700	3700	**28450**